

THE  
ARCHITECTURAL  
FORUM

INCLUDING "BUILDING MONEY"

OCTOBER, 1934

REPORT . . . PUBLIC MARKET . . . REMODELING . . . ENGLAND . . . AIR CONDITIONING

# TAKE A TIP FROM THE THEATRES

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Wide Range reproduces speech and music with perfect fidelity over the full audio frequency range because of five exclusive features: (1) Reproduction of *higher*

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In modernizing *apartment houses* and office buildings, another Western Electric product deserves consideration. This is the Radio Frequency Distribution System, which—using a *single antenna*—provides antenna and lead-in facilities for as many as 3000 tenant-owned radios. A System to accommodate up to 10 receivers of any make also is available.

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MONUMENT TO THE  
REVOLUTION

*Carlos Obregon Santacilia*  
Architect



# Mexico

## Commemorates Her Progress with **LIGHT**

**I**N one of the principal plazas of Mexico City, the government has raised this unique structure of steel and stone—a "Monument to the Revolution".

The monument, 205 feet high, stands in a plaza 400 by 600 feet. At night it will be illuminated by a battery of floodlights, and will have a searchlight that will throw a beam vertically upward from the top of the structure.

The plan for lighting this monument was drawn by Mr. J. W. Gosling of the General Electric Illuminating Laboratories, in co-operation with the architect, Carlos Obregon Santacilia. The drawing, by Mr. Gosling, shows how the edifice will appear at night.

For the lighting, General Electric is supplying 328 Novalux floodlighting projectors, 18 submersible floodlights for the two cascading fountains, and a 36-inch searchlight.

Our new publication giving descriptions and prices of all Novalux floodlighting equipment is now ready for distribution. Write to General Electric, Dept. 6A-201, Schenectady, N. Y., for your copy.

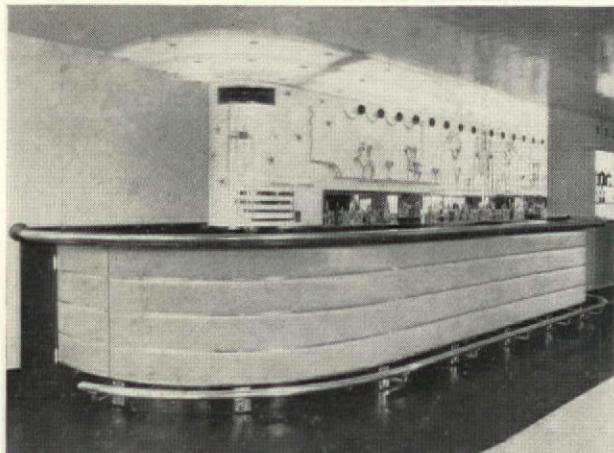
500-111

**GENERAL**  **ELECTRIC**

# SERVICE . . .

## is a Mighty Word

### When *Brunswick* is Back of It!



The HOTEL EMPIRE, New York City — Designed by Joseph Urban Associates — has a special front bar over 19 feet long with curved left-hand and right-hand returns and special 13-foot back bar with decorated wainscoting. Under-counter mechanical refrigeration. Work-board with all necessary conveniences.



ILLINOIS HOTEL, Bloomington, Illinois — A Brunswick installation of unusual beauty, designed by Schaeffer & Hooren, architects. Has a 13-foot special front bar with highly polished copper paneling and ebony finished mahogany top. The special 10-foot back bar has a 3-foot mechanically refrigerated section and display sections. An under-the-counter Brunswick Tap Cooler assures beer at uniform temperature.

● The architect's problem in designing a modern and well paying taproom is two-fold:

1. He must create a room which has beauty, individuality and, above all, an atmosphere of congenial hospitality.
2. He must conceal beneath this exterior beauty the facilities for serving beer, liquors and food at the proper temperatures and for giving faultless service. There can be no service delay — no waiting customers in a taproom — even in rush hours.

In both of these problems, Brunswick is able to bring to the architect's aid a matchless service. Our skilled craftsmen are experts at interpreting your plans. They not only faithfully reproduce your blue prints but catch the spirit of your designs as well.

Brunswick brings to your aid in planning service facilities an 89 years' experience. Our Planning Bureau is expert at helping you plan fixtures for a 16-foot room or the largest hotel. Back of its recommendations is no theorizing — no guesswork — no untried ideas. Our experts KNOW. They know to a quarter-inch the space required for high speed work. They know the arrangements that eliminate waste motion. They know the best temperatures for all liquors — and how to maintain those temperatures.

This priceless service, which is second to none, is yours without cost — merely for the asking. Our staff of skilled experts will gladly check your detail plans if desired. Any suggestions they offer will be given without obligation.

Write today for latest information on Brunswick service fixtures. Also for data on Billiard Tables, Bowling Alleys, Lawn Bowls, Toilet Seats and Squash Courts.

For small installations, Brunswick's superb line of stock service fixtures offers wide variety plus matchless efficiency with either mechanical or ice refrigeration, under-counter or remote storage facilities

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Over 20 years ago the Barrett Specification Roof on the Pennsylvania Railroad Terminal in New York City was being featured in Barrett advertisements like the one at the right.

170,000 square feet of Barrett Roofs protect the new Pennsylvania Station in Philadelphia, Pa. Architects: Graham, Anderson, Probst and White, Chicago, Ill. Constructors: United Engineers and Constructors, Inc., New York, N. Y. Roofer: Walter H. Tinney Company, Philadelphia.



## TWO great Pennsylvania R. R. Stations ... both BARRETT-ROOFED

RAILROAD engineers can't afford to "take chances"—on a signal system or on a roof. They employ every resource at their command to make sure that the smooth operation of the railroad will not be interrupted.

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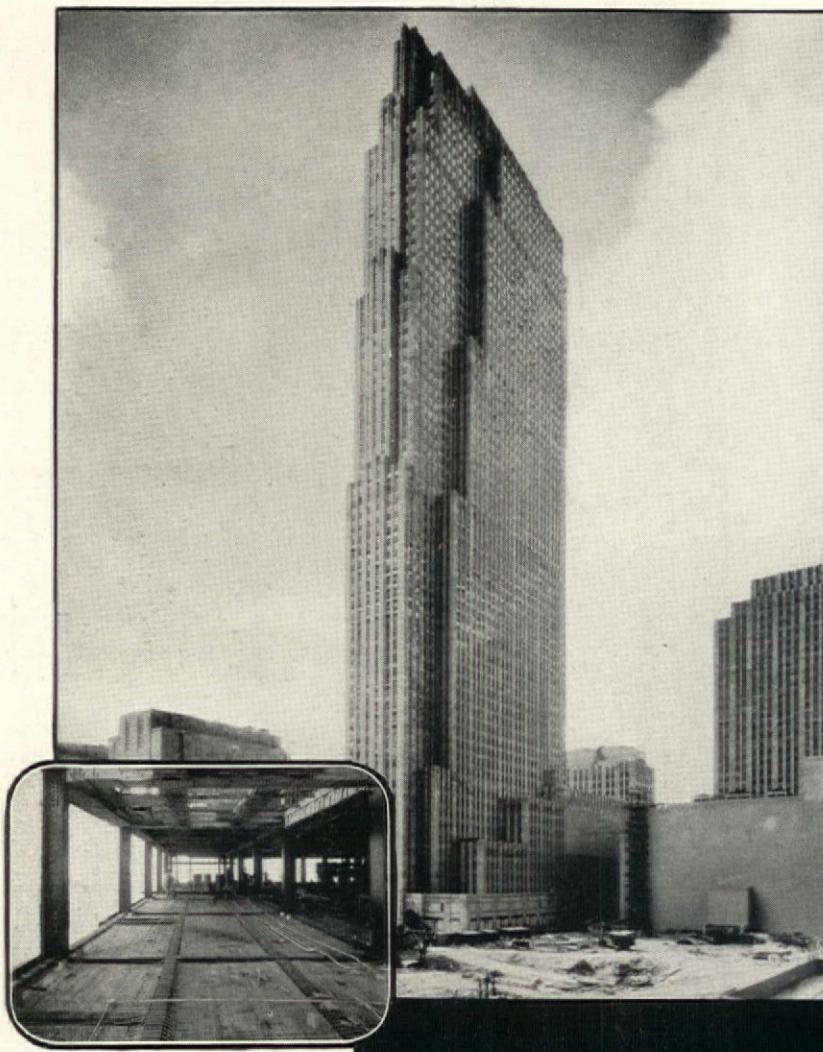
Birmingham  
Alabama

In Canada: The Barrett Company, Ltd., 5551 St. Hubert  
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RECOVER RIGHT WITH

**Barrett**  
ROOFS

# ROCKEFELLER CENTER



ROCKEFELLER CENTER, New York City  
Builders and Managers: Todd, Robertson, Todd Engineering Corporation and Todd & Brown, Inc., Architects: Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Fouilhoux, Structural Engineer: H. G. Balcom. All of New York City.

ON a site covering three blocks in the heart of New York City—several structures are moving skyward. These buildings bear the name of Rockefeller Center and when completed will set a new standard of beauty and usefulness. It is significant that the architects chose cinder concrete floor slabs reinforced with American Steel & Wire Company Wire Fabric to make them fire

proof and load proof. This is but one of many current examples that definitely indicate the trend in concrete floor slab construction. American Steel & Wire Company Wire Fabric is made of cold drawn high yield point steel. Its use gives greatest efficiency with low installation cost since it is easy to handle. Additional information furnished upon request.

1831



1934

## AMERICAN STEEL & WIRE COMPANY

208 South La Salle Street, Chicago  
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Pacific Coast Distributors: Columbia Steel Company, Russ Bldg., San Francisco

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AND ALL PRINCIPAL CITIES

Empire State Building, New York  
First National Bank Building, Baltimore  
Export Distributors: United States Steel Products Company, New York

# PRODUCTS AND PRACTICE

... that might have prevented latest sea disaster by assuring fire-proof staterooms for sleeping travelers.

EVERY one knows that, ironically enough, the greatest peril of the sea is fire. *Georges Phillipar, Atlantique*, and now *Morro Castle* have demonstrated that the most modern of ships may become flaming hecataombs in a few minutes and destroy hundreds of human beings who have no chance of escape.

What is not so generally known is that after the first two disasters listed Italian insurance companies refused to reinsure *Rex* and *Conte di Savoia* until the Italian government stepped in and assumed the greater portion of the risk.

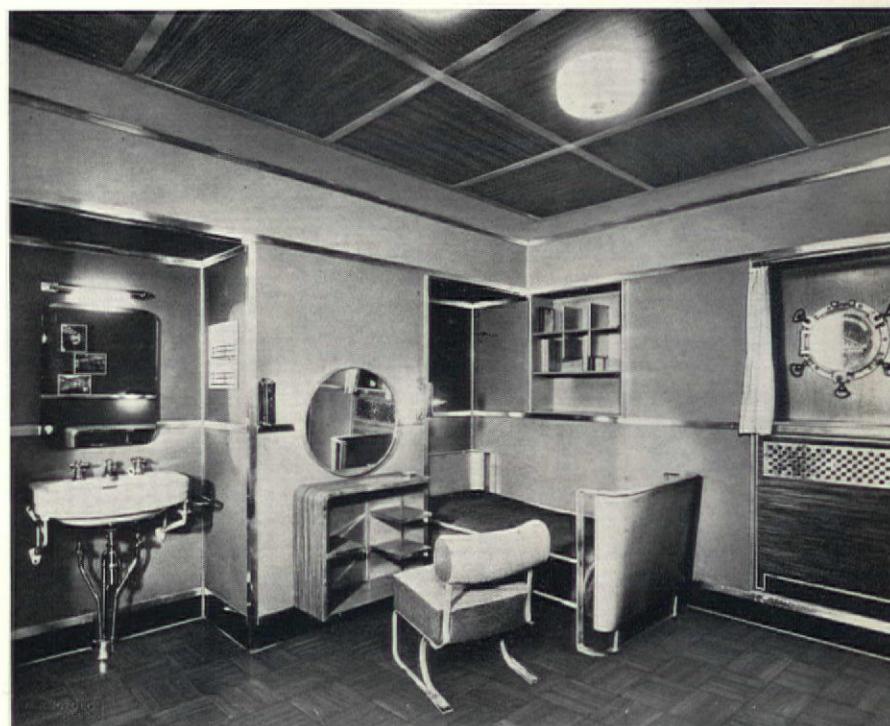
Experienced shipping men say that it is impossible to build fireproof ships as President Roosevelt demands. Engineer Ubaldo Magnani and architect Paolo Masera of Milan do not agree. As a result of the underwriters' criticism of the Italian liners they made a study of methods and materials that might afford a high degree of protection from fire, and at the same time provide heat insulation, sound insulation, light weight, resistance to corrosion from sea air, duct space, elasticity, ease of cleaning, and ease of installation.

As a result of the experiments they built a full sized model of a ship's stateroom which was exhibited at the fifteenth Sample Fair in Milan in 1933-34. The basic principle is to construct walls and ceilings of sheets of fire-resisting material held in place by angles and channels of metal.

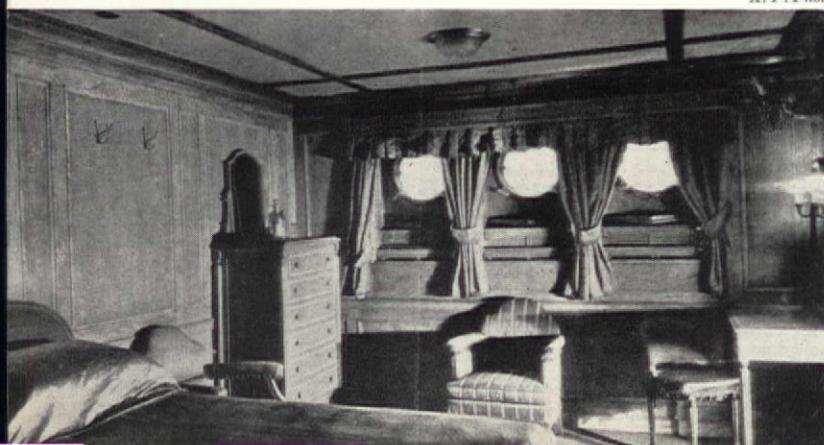
The sheets finally selected are made up of two sheets of a hard alloy called Peraluman glued on either side of an insulating sheet of Cel-Bes. The metal sheets are 7 mm. thick and the Cel-Bes 12 mm. To obviate the necessity of painting the exposed side is covered with linoleum.

Incombustibility is guaranteed by the fact that not only is Cel-Bes itself fireproof, but the melting point of the metal sheets is 1,200° F. It may seem that the linoleum might mitigate this incombustibility, but French experiments, conducted at Bligny, show that contrary to expectations, linoleum properly cemented to a base behaves exactly like a completely incombustible material. The high heat conductivity of the aluminum alloy is another factor of safety as it prevents building up local spots of high temperature.

Pursuing the construction methods for the walls and ceilings to its logical conclusion the floors, doors,



A. P. Photo

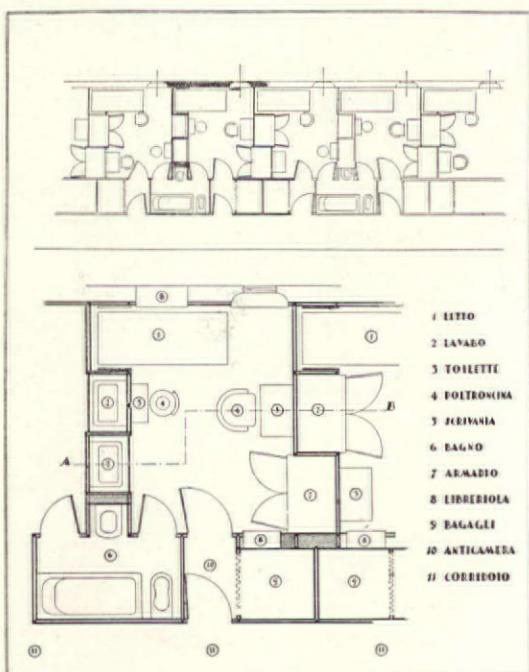
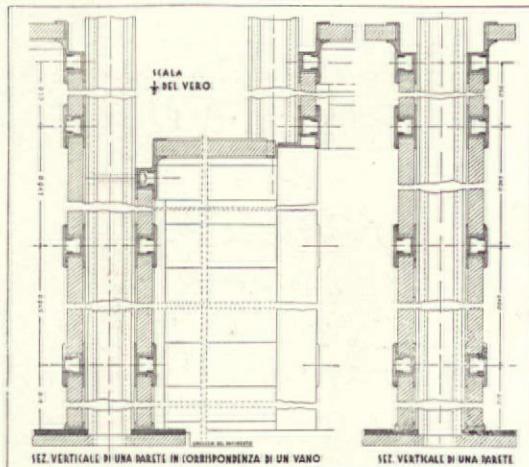


The stateroom on the left is one of those in the *Morro Castle* where the worst loss of life occurred. Furniture, paneling, and hangings are all inflammable. In the proposed room above not even the furniture can burn as it, like everything else, is fireproof.

*This is what the lounge of Morro Castle looked like after the fire. Design and construction methods advocated for staterooms could have been applied here just as well. No excuse for such disasters can be accepted when prevention methods are known*



Keystone



walls and some part of the furniture are made of or covered with linoleum.

The frame of the stateroom walls is made up of two special I-sections facing each other with a space of about 8 mm. between. The built-up wall panels are fastened to these with stay bolts and special sections. All these and the stanchions are constructed of the same Peraluman alloy as the panels. This system of fastening is especially devised to prevent creaking due to the movement of the ship. The drawings show sections through the walls so constructed.

The other requirements that guided these Italian collaborators in their work have also been satisfied. The low heat conductivity of the Cel-Bes and the high coefficient of reflection of radiant heat of the aluminum alloy assure a high degree of heat insulation.

The sound damping properties are good. The sound penetration of a wall of two panels is estimated to be less than 13.7 per cent at a pitch of 50 mm.

The weight of the panels is only 8.8 Kg per s.m. Peraluman alloy is especially designed to resist the corrosive action of sea air and Cel-Bes is waterproof when treated as it is here and cannot absorb dampness due to condensation.

Cleaning methods and their relative ease are so obvious that they need no elaboration.

The shelves and sides of bookcases, etc., are made of plates of the Cel-Bes covered on both sides like the wall panels.

The color scheme is as interesting as anything else in this particular design. Of course it may be varied infinitely due to the use of linoleum. The floors are dark brown Grand-Inlaid linoleum laid over a Cel-Bes insulating layer. The base is plain black. The walls for a height of 2 m. are light green. Above that height, carried over into the ceiling as a sort of cove effect, the tone changes to plain pearl white. The remainder of the ceiling is green Jaspé in panels with inverted stripes. Bed and chairs are of another non-corrodible aluminum alloy with plaited stuff in two tonalities. Door panels for switchboard, etc., are lined in green Jaspé.

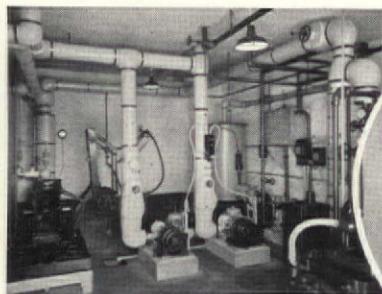
Perhaps this is not the final answer to the problem, but it marks a great advance over present methods.

*(Products and Practice continued on page 46.)*

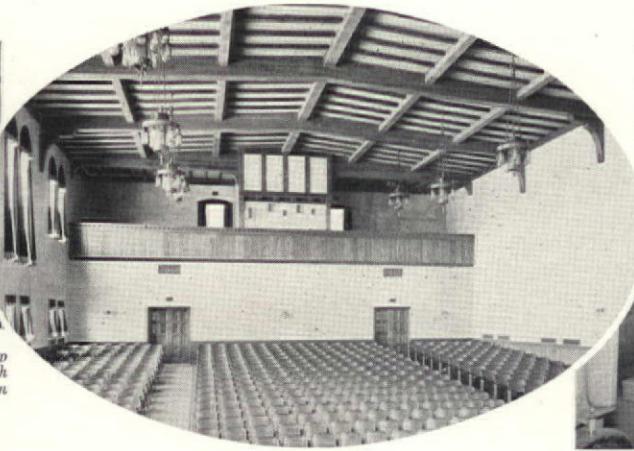


*... for advice on problems like these*

## ARCHITECTS COME TO ARMSTRONG



Above—U. S. HOSPITAL for veterans at Camp Custer, Michigan. Cold lines are insulated with Armstrong's Cork Covering to check refrigeration losses and insure economy.

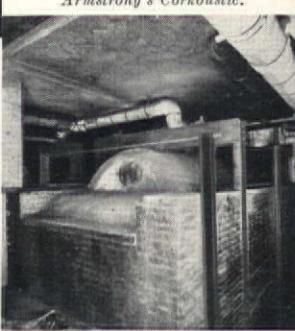


trial buildings. The current issue of Sweet's Catalog carries descriptions of the entire line of Armstrong's Cork and related building products.

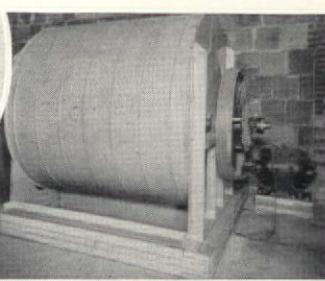
Armstrong's products are distributed through branch offices and representatives in principal cities throughout the country. In each office, there is a competent staff of engineers whose wide experience is at your service without obligation. Feel free at all times to call on them for recommendations on specific problems.

Some of the various uses of Armstrong's products are shown on this page. There are many other uses for buildings of every type; for office and public buildings, schools, churches, hospitals, residences, hotels, stores, and many kinds of indus-

For samples of any or all of Armstrong's products, write Armstrong Cork & Insulation Co., 902 Concord St., Lancaster, Pa.



Above—WORKING SPACE in the new Post Office, Portland, Maine. Quiet is maintained in this large area by a ceiling of Armstrong's Corkoustic.



Above—FANS FOR AIR-CONDITIONING in the Codman Square Theatre, Dorchester, Mass. Armstrong's Vibracork is employed to absorb vibration—caused by the fan and quiet unwanted noise.

**Armstrong's**  
**CORKBOARD      CORK COVERING**  
**ACOUSTICAL PRODUCTS**  
**VIBRACORK - INSULATING BRICK**  
**TEMLOK INSULATION**



# LETTERS

## Architect vs. Builder

### Forum:

Your article "The Forgotten Cost," which advocates that all work under the Federal Housing Administration be planned and specified by paid architects was evidently written without due unbiased analysis of the conditions involved.

Without condemning architects, the fact remains, that until the present time, architects have neglected this field (small house construction and repair) almost entirely. The reasons being that, (1) there is so much detail involved that it has proven unprofitable; (2) it is unethical for architects to solicit work so that promotion work is usually done by the contractor.

Because of these facts, most architects are unfamiliar with small house planning, and less familiar with small house construction costs. Since the relative high cost of home construction in relation to the average person's income makes owning a home a distinct luxury, every item of unnecessary cost must be eliminated.

There is no magic in the various component parts of a residence that will absorb the architect's fee by any short cut he may devise. In standard construction, cost is a matter of footage and the architect's fee deducted means a smaller home for the owner.

From another angle a comparatively few architects in each community would have thrust upon them all the planning and supervision of home construction which would mean that inexperienced draftsmen would carry a large share of the burden. It is obviously unfair and discriminating to have a comparatively few men at the helm of this great Federal Housing project when such a scheme is contrary to the existing order, which I will admit is far from being perfect.

Statistics show only a very small percentage of residence work has been handled by architects and the natural deduction from this is that the owner obtains more for his construction money by employing a competent builder specializing in this field.

GEORGE S. KOCHER

San Jose, Calif.

### Forum:

Regarding your article "The Forgotten Cost" I beg to submit the following for consideration:

The fact that so many small houses have been built by promoters and builders is not because architects lack interest in the small house, but because the public has neglected to make use of the architect's services in this important field of work.

Architects have not neglected the field of small house construction, as is evidenced by the many competitions for small houses which are being held constantly in this country. The winning design in almost

every case is by an architect and not a builder or promoter. This would seem to be conclusive that architects have not neglected this field and are familiar with small house planning.

Granted, that the builder can produce cheaper houses in quantity or individually than the architect, it doesn't necessarily follow that such houses are a better investment for the man who is putting his hard earned cash into a home. On the other hand, the owner is at the mercy of his builder who might be unscrupulous and profiteer by scrimping or substituting inferior materials, with no one to supervise or safeguard the owner's interest. The protection in supervision afforded the owner by one disinterested in savings resulting from cutting corners, is alone worth the architect's fee.

Unfortunately, the public has not realized the importance of this in the past, and has been inveigled into buying Jerry built houses, with tile baths, colored fixtures, breakfast nooks and swell lighting fixtures, without looking below the surface to see whether the house had been actually constructed so as to be wind and water tight and so as to avoid shrinkage and settlement cracks which do not appear until later.

Of course, what the public wants is cheap houses, but not to the extent where it becomes false economy and a liability in a year or two.

I believe that the biggest function of the architect is to solve the problem of the plan in such a way that rooms are assembled in the most economical manner, thereby saving in the cubage and, consequently, in the cost of the building. His whole training is based on this objective and someone with that training is essential for the greatest economy in planning a building.

The well-designed small house is an asset, the badly designed one is a poor investment; it is unsatisfactory today and may become a burden tomorrow.

I sincerely hope that the Federal Housing Administration will act on your suggestion in requiring paid architectural services on all housing which carries mortgage insurance by the Federal Housing Administration.

ROGER H. BULLARD

New York City

### Forum:

It may be fair to say that the architect's fee will reduce the size of the house that can be built for a given total, but I feel certain that in general the quality of the design and construction would improve correspondingly. To my mind, the question comes down to a choice between quantity and quality.

We often lose sight of the fact that most small houses are put up by speculative builders with all this implies. This in itself makes for results entirely different from those obtained when a house is designed and built especially for the individual owner. When the builder is building to sell,

he cannot be blamed for using the cheapest materials and construction that his conscience will allow. It reminds me of the small boy who was seen gathering poisonous mushrooms. When a passer-by remonstrated, the boy answered, "These ain't for eating. They're for selling."

It is my impression that the chief criticism of houses built without architects cannot be attributed to the incompetence of the builder, but rather that the building was put up too cheaply and that quality was sacrificed in false economy.

WALDRON FAULKNER

New York City

THE ARCHITECTURAL FORUM believes that competent architectural advice always tends to reduce costs rather than raise them, and will continue to advocate the mandatory employment of architects on NHA new houses. —ED.

## America's Glorious Future

### Forum:

I understand the ways of American business, of the New Deal's idealism, of men's human frailties but I still believe in the fundamental growth of better and better ways.

I am fifty years old — possess some lovely accessible land — near a lovely city. I want to use the land for happy homes for simple and contented people. I will sell the land reasonably — I can invest a little capital. I know of buyers or renters today — but when I, an older woman, go into the offices of banker, architect, builder or promoter the fees upon fees make any development prohibitive and conventions in building and buying freeze all enthusiasm.

When at the Chicago Fair I understood the values of the new home ideas, but when I write to the companies for concrete help they seem swamped in detail, delays and distances. Is it greed in contractors? Lack of vision in middlemen? Or the excessive overestimation of today's advertisement?

Many of us lost here and there know of America's glorious future and ache to push along with such exciting new ideas as THE FORUM pictures but we do need to pull together — isolated we are utterly ineffectual.

Would Mr. Randolph Evans' \$3,000 house (see THE ARCHITECTURAL FORUM, April, 1934, page 304) heated by range furnace, be practical in New England? Would Mr. Evans sell his used plans? Again can't you as an able FORUM devise a bartering of ideas and goods for cooperation among us pioneers to save us from the grafting of the money maker, the scorn of the conventional, and the errors of the ignorant?

If such a clearing house would not be the part of editors is there not an architect or contractor able to design or build such an office — the Truth plus beauty is a crying need of the small home builder. Do help us.

ANNE H. P. SWETT

Bloomfield, Conn.

# **THE ARCHITECTURAL FORUM REMODELING COMPETITIONS**

**\$500 IN PRIZES**

**... BECAUSE the National Housing Act is providing opportunities for architects to remodel homes and other types of buildings**

**... BECAUSE the problem of modernizing buildings is a challenge to the ingenious designer**

**... BECAUSE there is a dearth of attractive illustrative material suitable for publication and exhibition**

**... BECAUSE there is a genuine need for publicizing good precedent in remodeling operations to improve public standards of taste**

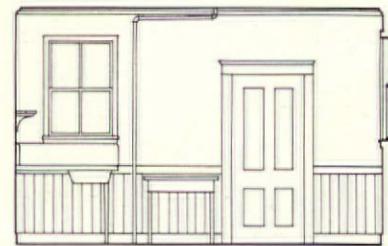
**... BECAUSE the profession needs to direct its attention to minor as well as major building rehabilitation**

**THE ARCHITECTURAL FORUM ANNOUNCES  
A SERIES OF REMODELING COMPETITIONS**

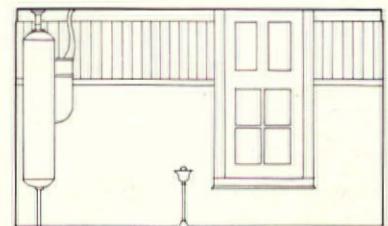
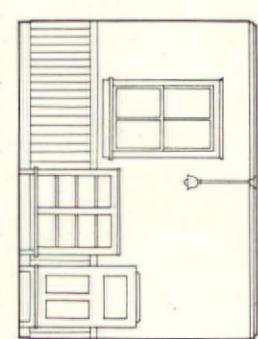
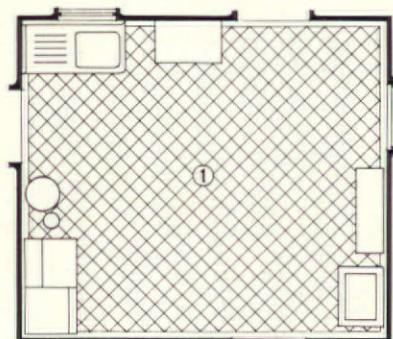
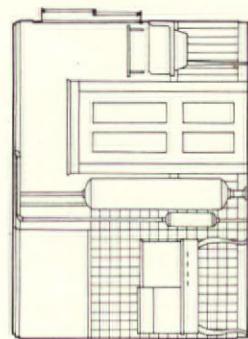


*We have resisted the temptation to select for modernizing one of the many "horrible examples" of kitchens. Examination will reveal that although this kitchen is in a fair state of repair, in arrangement, decoration and equipment it reflects none of the advances in convenience, appearance, and modern appliances which the progressive housewife demands today*

## MODERNIZED KITCHEN



Flooring	Sponsors Name	①
Walls, etc.	" "	②
Range	" "	③
Sink	" "	④
Dishwasher	" "	⑤
Refrigerator	" "	⑥



Scale  
0 5

## THE ARCHITECTURAL FORUM REMODELING COMPETITION

*Drawing of the present arrangement. Competition drawings, showing remodeling scheme, must be similarly disposed. See page 12 for complete instructions*

# COMPETITION FOR THE DESIGN OF A REMODELED KITCHEN

IN Kenosha, in Camden, in Jackson, in Bangor, in Berkeley there is a new desire under the eaves—perhaps not a new desire, but a new reason to revive old desires.

For, as in many another department of the daily lives of Americans, Uncle Sam is extending a helping hand to those who want to restore their homes to a standard that we like to think is American. From their bank Mr. and Mrs. John Citizen have learned that they can repair their homes, not with Uncle Sam's money, but with money that he has encouraged bankers to lend. While John Citizen will undoubtedly want first to spend the money for a basement recreation room or to bolster up any structural weaknesses or repair any damages that time may have inflicted on the house, Mrs. John, whose word is near enough to law to satisfy us, wants to spend her money on the kitchen. So, for that reason, the first in this series of ARCHITECTURAL FORUM REMODELING COMPETITIONS is in accordance with Mrs. Citizen's desires.

## THESE MANUFACTURERS JOIN WITH THE ARCHITECTURAL FORUM IN SPONSORING THIS COMPETITION

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Much information regarding these sponsors' products will be found in the advertising pages which follow in the special Remodeling Competition Section, pages 13 to 22 inclusive. Any competitor may obtain additional data by writing direct to the manufacturer for printed matter or by visiting his local office or distributor.

# P R I Z E S

1st prize... \$200

2nd prize... \$100

3rd, 4th, 5th and 6th prizes... \$50 each

**ELIGIBILITY:** This competition is open to all architects and draftsmen.

**REQUIREMENTS OF THE PROBLEM:** The competitor is completely to remodel and modernize the kitchen, shown in the photographs and drawings on page 10, choosing materials, fittings, and fixtures from among those produced by the SPONSOR MANUFACTURERS listed on page 11. Where more than one SPONSOR MANUFACTURER makes similar materials, fittings, or equipment, the competitor is free to choose from among these the products he considers most suitable to his scheme. Only where any equipment or materials needed for the scheme proposed are not produced by any SPONSOR MANUFACTURER is the competitor free to use any he may desire.

**TOTAL COST:** The total cost of this remodeling, including everything necessary, shall not exceed the sum of \$1,500. This sum shall be considered to include the architect's fee of 10 per cent.

**CONDITIONS NOT SHOWN IN PHOTOGRAPHS OR DRAWINGS:** The competitor is to assume that the family consists of Mr. and Mrs. John Citizen and three children, Henry, 14, John, Jr., 12, and Mary, 9. John Citizen is a college graduate and is reasonably well-to-do. Gracious Mrs. John is also thrifty and does all her own housekeeping except when she gives a party. The home in which they live was inherited by Mrs. John and is one of those fine old-fashioned houses in a desirable residential district of a city of 100,000 people. The kitchen is used for something more than cooking. Sometimes Mr. John works late, and Mrs. John enjoys getting him a light supper after he comes home. When Mrs. John entertains her Wednesday Bridge Club, the boys, who come home from school for lunch, eat in the kitchen.

The competitor shall include some method for keeping the kitchen free from cooking odors. The competitor shall assume that all the usual and normal services are available, that is, that sewer, water, gas, electricity, etc., are all at his disposal.

The entry shown in the photograph is not a part of the kitchen nor is there a pantry. The competitor, however, is free to move either or both of these doors to produce the result he desires. He may tear out partitions, add new ones, relocate pipe lines, change the size or location of doors and windows, etc. In each case all changes, including any refinishing of outside walls or other rooms made necessary, shall be considered part of the total cost.

**DRAWINGS REQUIRED:** There shall be but one drawing for each scheme which shall be rendered on a single sheet of mounted heavy white paper or illustration board 20" x 24" in size, with a single line border drawn  $\frac{1}{4}$ " from the top, side edges, and the bottom, as shown by the drawing on page 10. At the bottom of the sheet shall be a box 1" high by the entire length of the sheet within the borders also with a single line border. In this shall be placed the title: "Architectural Forum Remodeling Competition" as shown in the drawing on page 10. Mounted tracing paper or photostats shall not be used.

Upon this sheet shall be drawn in black ink a plan and

four elevations arranged as in the drawing on page 10. These are to be rendered in COLOR. India ink outline may be used. Diluted ink, colored crayon, or lead pencil shall not be used. THE COLORS, FORM, AND PATTERN OF ALL EQUIPMENT AND/OR MATERIALS MUST BE ACCURATELY PRESENTED. These drawings are to be made at the scale of  $\frac{1}{2}$ " equals 1'-0". The elevations shall show all fixtures for lighting as well as other equipment.

**IDENTIFICATION OF EQUIPMENT:** Every new fixture or article of equipment, made by a SPONSOR MANUFACTURER, whether architectural, decorative, structural, or mechanical, shall be marked with a circle  $\frac{1}{4}$ " in diameter in which shall be a numeral. This need not apply to such items as patches in either plaster, or wood flooring. In the upper right-hand corner of the sheet the competitor shall list such materials, fittings and fixtures of the SPONSOR MANUFACTURERS ONLY. Each is to be preceded by its appropriate identifying numeral. Remembering that these drawings will be somewhat reduced when published, the lettering should be large and clear enough to allow for such reduction and fancy lettering should be avoided. While the purpose of this competition is to secure practical, workable schemes for remodeling, secondary consideration will be given, in the judgment, to attractiveness of presentation. No other sketches, details, or information other than called for will be permitted.

**SIGNATURE OF DRAWINGS:** Each drawing shall be signed in the lower right-hand corner with a device or nom-de-plume. Each drawing shall be accompanied by a plain white opaque envelope bearing the same device or nom-de-plume as the drawing. Each drawing shall, together with the envelope, be enclosed in a sealed wrapper having no distinguishing marks of any sort whatever. This shall be wrapped for mailing or other delivery in an outer cover. Drawings must be delivered flat and suitably protected.

**DELIVERY OF DRAWINGS:** All drawings shall be delivered to the office of THE ARCHITECTURAL FORUM, to a United States post office, or the Railway Express Co., of the competitor's place of residence on or before 12 midnight, November 10, 1934, local time.

**TITLE TO DRAWINGS:** All drawings shall become the property of THE ARCHITECTURAL FORUM who, with the SPONSOR MANUFACTURERS, reserves any and all rights of exhibition and publication. In all publicity the name and address of the designer will be used.

**ARCHITECTURAL ADVISER:** The Architectural Adviser to the Jury of Award will be Leonard Cox, A.I.A.

**JURY OF AWARD:** The Jury of Award will consist of three architects, a domestic science expert, and the Architectural Adviser.

**REPORT OF THE JURY:** The report of the Jury and the list of prize winners will be published in the earliest available issue of THE ARCHITECTURAL FORUM.

**COMMUNICATIONS:** It is the opinion of the Architectural Adviser that the problem is sufficiently defined in the program. It is, therefore, required that there shall be no communications.

*New KITCHENS  
FOR Old WITH  
ARMSTRONG'S LINOLEUM  
and LINOWALL*



*A great part of the charm of this kitchen is due to the sparkling linoleum floor and colorful Linowall walls. This might easily be a remodeled kitchen.*



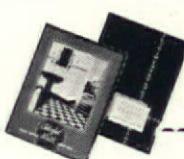
IN remodeling and designing kitchens, you have no greater ally than Armstrong's Linoleum and Linowall. Both are easily added to the present room without expensive construction, plastering, or repairing; Linoleum is securely cemented to the old floor, and Linowall (available in 17 distinctive patterns) is cemented over the old wall. The result is permanently colorful floor and walls that go a long way toward making new kitchens of old.

But appearance is not everything! There are convenience, permanence, practicability, ease of cleaning to consider . . . and Armstrong's Linoleum Floors and Linowall more than answer all requirements on those points too.

You can make a little money do a great deal of renovating with these two Armstrong products. That's why we recommend it to those architects entering the competition . . . and to those who will have charge of expending remodel-

ing money made available through the National Housing Act.

Send coupon today for full information, illustrated booklets, and a list of dealers who will supply prices.



ARMSTRONG CORK COMPANY  
Floor Division, 1203 State St., Lancaster, Pa.

CONTESTANTS—Send this coupon for BOOKS showing installations and patterns in full color.

- "Floor Beauty for New Homes and Old."
- "Colorful Walls That Never Grow Old."
- Names of dealers who will quote prices.

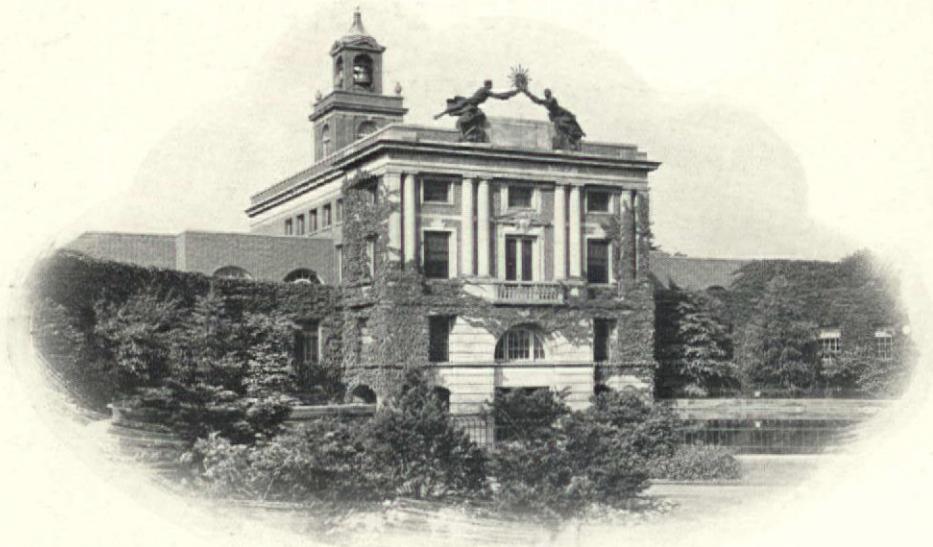
Name.....

Street.....

City..... State.....

**Armstrong's**  
**LINOLEUM FLOORS and LINOWALL**

# THE MODERN KITCHEN



## *The General Electric Kitchen Institute offers full cooperation to architects on* **MODERN KITCHEN PLANNING**

SENSING the ever increasing demand of modern housewives for kitchens completely equipped with electrical servants, General Electric has established the G-E Kitchen Institute as an aid to kitchen modernization. We invite architects to make full use of its services, which include detailed information and specifications on all G-E Kitchen appliances. Contestants in the Architectural Forum Competition should find this service valuable. Whether you are planning a modern apartment house efficiency kitchen or a de luxe kitchen in the most palatial home, you will find the services of the G-E Kitchen Institute very helpful. For further information on this service see the G-E Distributor in your locality.

The day of the all-electric kitchen has arrived. It has definitely been proved a potent factor in eliminating rental vacancies, both in apartments and single homes. It is likewise a powerful influence in selling homes at a profit. The well planned kitchen

of today includes an electric range and electric dishwasher as well as an electric refrigerator.

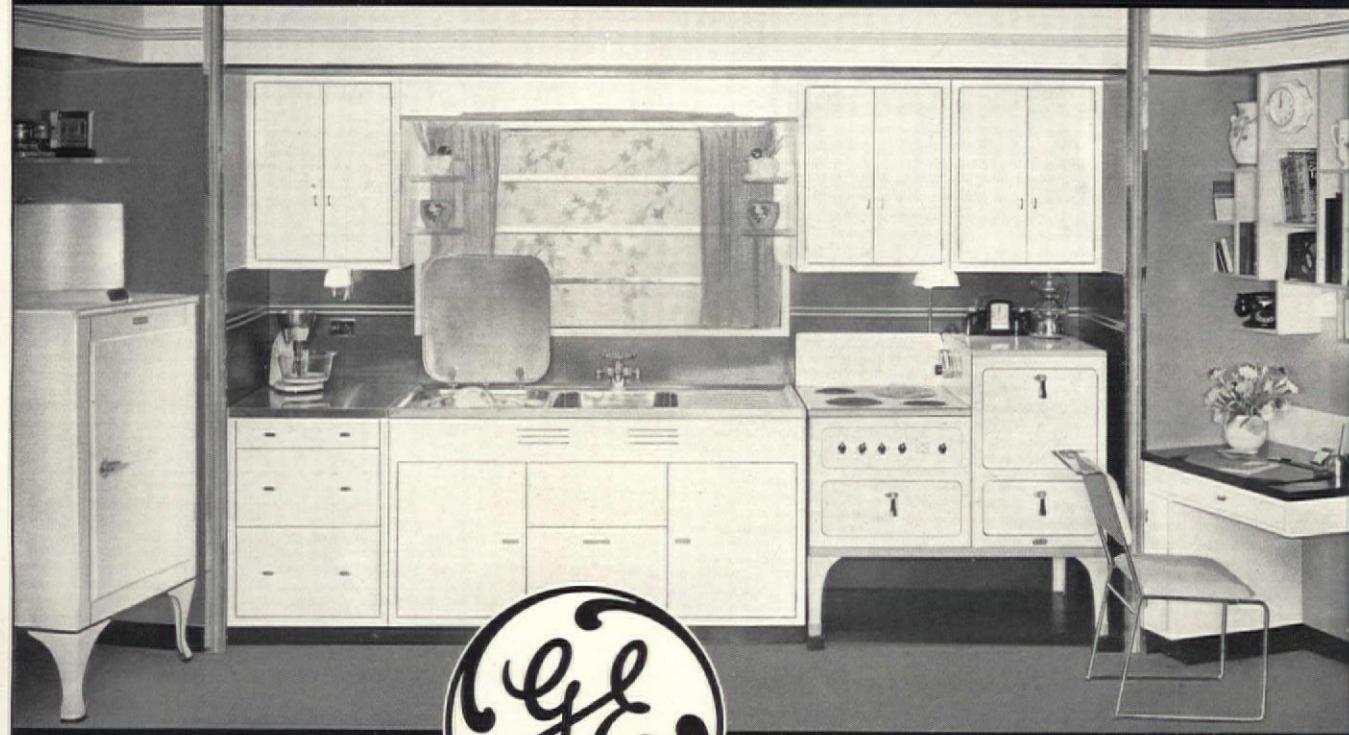
Electric cookery, with the invention of the G-E Hi-Speed CALROD heating unit, is as fast or faster than conventional cooking methods. In addition, it is easier, cleaner, cooler, safer, and more economical. Foods cooked electrically have a new fuller flavor that is delicious.

The perfected General Electric Dishwasher washes all the dishes hygienically clean in 5 minutes for 1c a day. Hands never touch water, and there is no breakage or chipping of even the daintiest china.

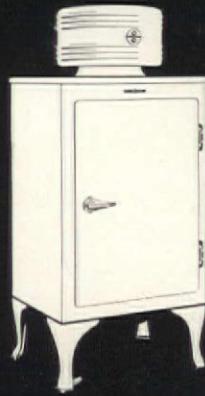
The G-E distributor will be glad to furnish, through the Institute, complete details on any General Electric Kitchen appliances that fit into your plans, for modernization or new construction of either single or multiple residential dwellings. General Electric Co., Specialty Appliance Sales Department, Section CG10, Nela Park, Cleveland, Ohio.

**GENERAL**  **ELECTRIC**

# IS ALL-ELECTRIC! . . .



There is a General Electric refrigerator model and size for every requirement . . . including Monitor Top, Flat-top and Liftop models. Prices as low as \$77.50 (plus freight).



G-E Monitor Top refrigerator



G-E Liftop refrigerator

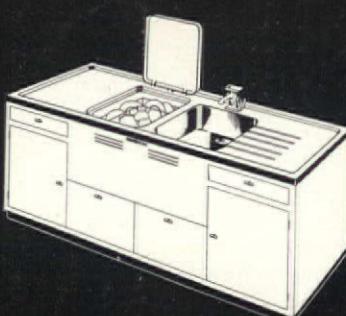
General Electric refrigerators are first in dependable performance, first in modern styling, and lowest in operating cost. Universally recognized as the standard of refrigeration excellence.



G-E Flat-top refrigerator



(left) World's finest electric range—the G-E Imperial.  
(right) G-E Companion—\$72 (plus freight). Many other models.



G-E Electric Dishwasher washes all the dishes in 5 minutes. Models for every kitchen.

# Equipped with Monel Metal OUTMODED KITCHENS glow with MODERN BEAUTY



(Left) "Before". View of a typical kitchen that offered opportunities for remodelling.



(Below) "After". Same kitchen after installation of Double Bowl Monel Metal Cabinet Sink and two Monel Metal Cabinet Tops (all standardized units). Also Range with Monel Metal top.

*Striking transformations that efface all trace  
of past confusion...*

ARCHITECTS handling remodelling jobs are finding a great boon in Monel Metal. Nothing transforms a shabby, old-fashioned kitchen more completely.

The picture shown above is one of many recent remodelling projects in which Monel Metal worked the magic of "New Kitchens for Old."

It is a simple matter to assemble an all Monel Metal Kitchen. There are stock models available in Monel Metal sinks, cabinet tops, Monel Metal topped tables, and now Monel Metal refrigerators as well as gas or electric ranges with Monel Metal tops, broiler pans and oven linings. But this stock equipment by no means marks the limit to the use of Monel Metal. Designers of some of the smartest modern kitchens have utilized it for ornamental

window trim and for range-canopies.

In addition to shining beauty, Monel Metal offers ease of cleaning and enduring strength. Being solid metal right through, there is no coating to chip, crack or wear off.

Get all the information you need for specifying Monel Metal in remodelling the kitchen. Fill in the coupon and we shall gladly and promptly send it to you free.

THE INTERNATIONAL NICKEL COMPANY, INC.  
67 WALL STREET NEW YORK, N.Y.

## Monel Metal



Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third Chromium. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.



## Sinks and Cabinet Tops

Monel Metal Sinks and Cabinet Tops are made in 57 standardized shapes



and sizes, to meet practically every kind of kitchen layout.

## Water Heaters

"Whitehead" Automatic Gas Water Heaters are made with Monel Metal tanks. They are available in 3 types—slow recovery, under-fired, and side-arm—tested by hydrostatic pressure up to 400 lbs. Electric water heaters are also available with Monel Metal tanks.

## Ranges

Leading manufacturers of both gas and electric ranges are offering models with Monel Metal tops, as well as burner trays, broiler pans and oven linings.



## Table Tops

The "Smartline" Table, with Monel Metal top is obtainable in 3 sizes and 4 color combinations. Designed by Ray Patten.

## Refrigerators

Leading makers of mechanical refrigerators are offering models with cases made entirely of Monel Metal.



\*Reg. U. S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC.  
67 Wall Street, New York City

Please send me:

- The INCO catalogue of Standardized Monel Metal Sinks, Tops and Tables (A. I. A. File No. 29H6), including prices.
- Full data on "Whitehead Hot Water Heaters", including prices.
- Full data on gas and electric ranges with Monel Metal parts, including prices.
- Full data on Monel Metal refrigerators, including prices.
- Names and addresses of fabricators of Monel Metal hoods, trim, etc.

Name \_\_\_\_\_

Address \_\_\_\_\_

City & State \_\_\_\_\_

AF 10-34

YOU'LL GET GREATER FREEDOM OF  
ARRANGEMENT AND LAYOUT WITH

# CRANE *Sunnyside* CABINET SINK



Meets All Kitchen Requirements

## USED AS A UNIT COMPLETE OR AS PART OF CONTINUOUS CABINET ARRANGEMENT



Figure the Crane SUNNYSIDE Cabinet Sink into your layout and you'll understand what we mean by its *versatility*. It was designed to achieve greater freedom of arrangement and setting in any kitchen!

It is compact: only 60 inches long, with a double drainboard and large sink compartment that needs no dishpan. It has a low back—8 inches—to permit it to be located under a window. It fits any commercial cabinet of steel or wood.

You can plan for it *anywhere*. It is made with corner walls on right or left or both ends. If you intend to use it continuously with work table tops it is made *without* corner walls—to set free.

This all-steel welded cabinet has a baked enamel finish, with flush front double-faced doors and drawers. Hardware is in smart chromium plated cast brass.

The SUNNYSIDE is a cabinet sink, its *flat* bottom surfaces fitting smoothly over the cabinet top, its porcelain enamel surfaces *stay* glistening and lustrous, unaffected by fruit juices and citric acids. A feature any woman will appreciate is the smooth, *flat* drainboard surface at front rim and along the back. Plan this SUNNYSIDE Cabinet into your layout—it comes in white or in any of a dozen Crane colors. Write for specifications.

## HIGHLIGHTS

- Any commercial steel or wood cabinet will fit the "Sunnyside."
- Cast-iron porcelain enamel sink.
- All steel welded cabinets in colors.
- Large, roomy basin for dishpan use.
- Low 8-inch back to sink.
- Chromium plated cast brass hardware.
- Drainboards, back and basin of one piece.

Ideal for small homes and apartments. The SUNNYSIDE Cabinet Sink may be installed complete in itself or as part of a continuous cabinet arrangement. Becomes the key fixture around which a decorative treatment may be planned!

# CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILL.

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Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

# YOU'LL FIND IT *Exciting* TO WORK WITH CARRARA

## *in your Kitchen Designs*

**T**HIS modern structural glass lends itself so well to the planning of practical, beautiful kitchens! It offers you such endless opportunities for originality of design!

As a wall material, it has everything that even the most particular architect requires. Good looks . . . because of its shining, lustrous surfaces, its serene and restful depth of color-tone, its reflectivity. Permanence . . . because it does not check, craze, stain or change color with age. Ease of installation . . . because it is applied quickly and simply with special cement flexible enough to counteract the

strains that occur when the house settles. Ease of cleaning . . . because it can be kept spotless by a periodic wiping with a dampened cloth. Sanitation . . . because it does not absorb cooking odors in the kitchen, is impervious to grease, grime, chemicals. And reasonable cost . . . because its price is far lower than you would expect to pay for a wall material so outstanding in every way.

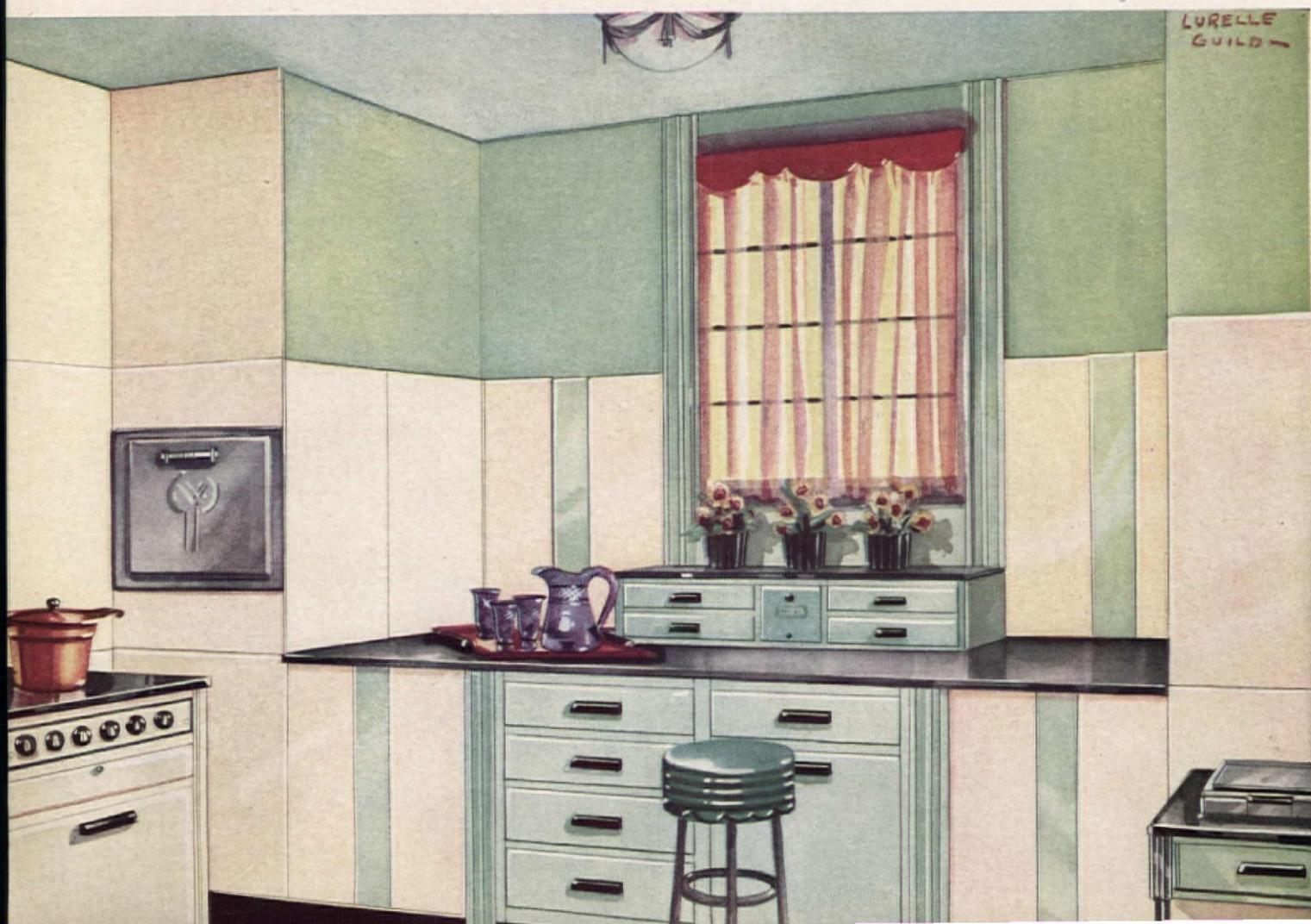
You will find Carrara Walls ideal for bathrooms, too. Write for our folder containing colored illustrations of Carrara installations and complete information. Pittsburgh Plate Glass Co., 2268 Grant Bldg., Pittsburgh, Pa.

## CARRARA

→→→ *The modern structural glass* ←←←

A PRODUCT OF THE PITTSBURGH PLATE GLASS COMPANY

LURELLE  
GUILD



**"Tenants highly pleased with Silence, Economy and Dependability**

of NEW AIR-COOLED

*Electrolux*"

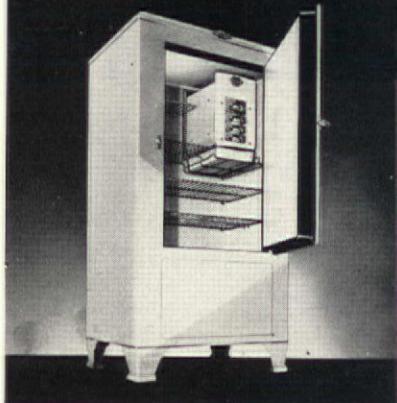
**Says MR. A. RODBELL, Pres.**  
*Bellrod Realty Corp.*  
**22 Haven Ave., N.Y.C.**

"**S**o thoroughly am I convinced of the superiority of Electrolux that I have in turn influenced friends of mine to equip their buildings with it." Mr. Rodbell has had long experience in apartment ownership and management. His experience explains why more than 4,500 apartment buildings in Metropolitan New York are equipped with Electrolux.

*Mr. Rodbell writes as follows—*

"Automatic Refrigeration in my estimation is a highly important feature in the up-to-date apartment. For that reason I have investigated all makes of refrigerators. I am utterly convinced that Electrolux, the Gas Refrigerator, is the finest, most dependable refrigerator on the market. At the present time we have approximately 300 Electrolux refrigerators in our apartments.

"I bought my first Electrolux several years ago and found that it came up to every expectation. The new air-cooled models were an improvement in that they eliminated minor



difficulties due to water conditions. During the past two very hot summers the air-cooled Electrolux Refrigerators installed in my apartments gave complete satisfaction and needed little or no attention.

"My tenants are highly pleased with the refrigerators because of their dependability, silence, and low operating cost.

"So thoroughly am I convinced of

the superiority of Electrolux that I have in turn influenced friends of mine to equip their buildings with it."

Your local Gas Company recommends and services every Electrolux they sell. It will pay you to see the models at their showroom and ask them any questions you wish. Remember your Gas Company values your good will above everything else. You can depend on them for the real facts. Electrolux Refrigerator Sales, Inc., Evansville, Ind.

*NEW Air-Cooled*  
**ELECTROLUX**  
THE SERVEL *Gas* REFRIGERATOR

*Do you know that*

# BRIGSTEEL SINKS

*GIVE YOU the widest variety  
of two-tone color combinations  
EVER AVAILABLE . . .*

● The Brigsteel Cabinet Sink, formed from one piece of pure Armco ingot iron, has found immediate favor with many leading architects.

They have been quick to appreciate its many structural and material advantages and find that the wide range of color combinations enables them to plan a kitchen in any color scheme at a considerably lower cost than was possible with the old, conventional type sink. For complete information and specifications, address Briggs Manufacturing Company . . . Detroit, Michigan.

● The Brigsteel sink and cabinet pictured here make an attractive and practical unit. The 60-inch sink illustrated has a double drain board and is available with or without the cabinet. The cabinet is all-steel. The hardware on the embossed panel doors and drawers is satin-finish metal. The legs are adjustable and finished in stainless chrome. Cabinet available in colors either to match or contrast with the sink. These sinks and cabinets are also available in 43-inch size.

## LIGHTER

Transportation and installation costs reduced. 65% less weight carried by the wall.



## VERY STRONG

975 pounds, by actual test, supported without bending metal wall brackets.



## ACID-RESISTING

Porcelain enamel finish proven impervious to fruit juices and acids.



**Brigsteel**  
FORMED  
PLUMBING WARE



# THE IDEAL FLOOR-COVERING FOR THE KITCHEN

This is 1934. Woman's place is no longer "in the home." But the kitchen still remains her indisputable realm. So, in modernizing this work-a-day room, eye-appeal is a paramount factor. Sloane-Blabon Linoleum—colorful, modern, yet conservative in taste—offers the ideal medium for relieving the drabness of the average kitchen. Resilient, sound-absorbing, easy-to-clean, it is the perfect floor-covering—especially when distinctiveness, long-wearing qualities and economy must be considered, in designing a "budget" kitchen.



Having set a new standard of quality and beauty in scores of well-known public buildings, Sloane-Blabon Linoleum is being specified today by more and more leading architects for use in the home, offering, as it does, an entirely new conception of tasteful decorative artistry. Available in a wide selection of attractive patterns in household weights. Our "Linoleum Handbook" contains a wealth of useful information for architects and will be sent free upon request. Write W. & J. Sloane Selling Agents, Inc., 577 Fifth Ave., New York.

# SLOANE-BLABON LINOLEUM

# Modernize

WITH  
**FORMICA**

**WALL COVERING**

**CABINET TOPS •**

**WINDOW STOOLS**

•• A THOROUGHLY modern material is available for modernizing kitchens. Formica will provide smooth, colorful, easily-washable, and thoroughly durable walls.

It makes available kitchen cabinet tops with or without sinks that please the eye and thrill the housewife.

Window stools to match in color and surface are frequently used in connection with Formica tops and walls.

Formica is available in many colors, and designs in one color may be inlaid on another.

*Get the facts before you start your job*

**THE FORMICA INSULATION COMPANY**

4620 Spring Grove Avenue  
Cincinnati, Ohio

**FORMICA**

**FOR BUILDING PURPOSES**



**FOR BUILDING PURPOSES**

# World's Highest COMPLETE AIR CONDITIONING INSTALLATION



IT'S in the new general offices of the American Cyanamid Corporation...this record-breaking installation of Sturtevant Air Conditioning. High up on the 57th to 61st floors of the RCA Building in Rockefeller Center, N. Y.

All of the equipment...even the necessary mechanical refrigeration...is installed between these floors. It is the highest complete air conditioning installation on record.

} 57th to 61st FLOORS  
} RCA BUILDING IN  
} ROCKEFELLER CENTER

Even the newest and most modern of buildings are taking advantage of the proved renting value of air conditioning. Old buildings are modernizing by air conditioning to combat competition of more modern structures, to maintain rental values and to overcome the undesirability of the lower, noisy floors.

It would pay you to investigate. We would be glad to furnish information and to give you the benefit of our many years of experience.

B. F. STURTEVANT CO., Hyde Park, Boston, Mass.  
Chicago, Ill., 400 N. Michigan Ave. San Francisco, Cal., 681 Market St.  
*Branch Offices in Other Cities*

**TYPICAL STURTEVANT INSTALLATIONS**  
Johns-Manville Corp., New York City, (6 floors)  
Southern California Edison Bldg., Los Angeles  
Higbee Department Store, Cleveland  
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Department of Justice Bldg., Washington, D. C.  
House of Representatives Office Bldg., Washington, D. C.  
Security Building, Phoenix, Arizona

*Pioneers in*  
**Sturtevant**  
REG. U. S. PAT. OFF.  
*Air Conditioning*

## LETTERS

(Continued)

### Better Churches

Forum:

... The physical structures of a very large proportion of the more than two hundred thousand Protestant churches in the United States present a staggering need for repairs to prevent further deterioration. ... In addition to the demands of ordinary repairs and replacements the need for adequate physical equipment is greatly intensified by demands growing out of advances in the modern church program.

... The ugliness of our Protestant churches is proverbial. In one fair Pennsylvania valley, travelers, seeing the fine barns in this section of the country, have actually mistaken them for churches. The barns look more like churches than do the church buildings. The young people who enjoy fine high school buildings, elaborate moving picture theaters, architecturally designed filling stations and hot dog stands will not always attend church in the awfully ugly rooms.

... Through the efforts of committees and departments of church architecture and other agencies, churches have become building-conscious. There is every evidence that one of the first major activities in the revival of economic conditions will be church building, rebuilding and the introduction of new equipment.

What does this mean to the architectural profession? The churches have become architecturally conscious. Increased travel, particularly in Europe, even jaunts over the Mexican border, and the efforts of the agencies above noted, together with the greatly increased publicity of church architecture by the religious and general press, have contributed to this happier situation.

Architects are sometimes blamed for not giving the church serious and special consideration in their practice and in architectural education. Even now architects who should know better occasionally "put over" an Elks Lodge design on a church. There is no objection to Elks Lodges, but there is a peculiar feeling that a church building somehow ought to look churchly just as church music might occasionally draw upon religious themes.

American architects are worthy of commendation in extravagant terms for real advances in church architecture, even though some advances have been criticized for having been in reverse. However, the relatively few significant church buildings erected in the last twenty-five years are proportionately small in number among the thousands of church buildings designed in the ginger bread of post-Richardsonian era and still standing as if to proclaim a creator of ugliness rather than the Architect of a universe of beauty and wonder. . . .

ELBERT M. CONOVER

New York City



Harris & Ewing

No nervous breakdown

### Handsome Delano

Forum:

In your July, 1934, magazine you published on page 76 a very nice and mostly correct article about my husband — and a picture of him which was really pretty awful. From all over the country our friends have written in, suggesting he take time out for an extended vacation to avoid the nervous breakdown which the picture indicated to be imminent!

We now have some pictures that really are good likenesses. . . .

May I prevail upon you to destroy forever that cut which you have, and if you should ever need another photograph of this Delano, I shall be only too glad to furnish one that really does him justice. Your magazine is much too handsome to publish so unworthy a picture.

RUTH S. DELANO  
(Mrs. Preston Delano)

Washington, D. C.

### Standard Raiser

Forum:

... It is very gratifying to note the fine and constructive cooperation THE FORUM is giving the Federal Housing Administration in its efforts to provide much needed employment of building trades, as well as improve housing and living conditions throughout the nation.

... May I congratulate you on your very attractive and constructive publication. THE FORUM will, in my opinion, prove a most important factor in raising the standards of architecture and construction throughout America.

ROBERT JEMISON, JR.

Birmingham, Ala.

### Home Finance

Forum:

You seem to be interested in the building of new homes, and I am, therefore, sending you a copy of my letter to Mr. W. L. Austin of the Census Bureau, in which you will notice I have made a suggestion as to the best way, in my opinion, to get home building started in earnest.

W. HUME LOGAN

Louisville, Ky.

Dear Mr. Austin:

... Build a home and you immediately give a big job to transportation. A home runs into large tonnage and it must all be transported from somewhere, which would mean business for the railroads and trucks.

Second, when a man builds a home it is no good until it is furnished; he must immediately buy furniture, rugs, hangings, and everything that goes to furnish a home, which means something for every factory in the land, and it is wanted without delay when the home is finished. They will buy then or bust a home string.

Factories need orders for their products. They do not need Government money. The banks are full of money that they are dead anxious to loan to factories that have orders on their books.

... Let the Government loan to any man of good character who owns the ground as much money as his annual income is at the present time; not less than \$1,200 and not more than \$5,000; the present interest charge to be 4 per cent, the period of the loan fifteen years. By a little calculation you will find that interest and the principal in full will be paid out in the fifteen years, with only 11 per cent of the borrower's annual income, leaving him 89 per cent of his regular income for other living expenses.

... This program should only continue, of course, for a limited time, and be discontinued as soon as conditions sufficiently improve to warrant business on regular terms. The getting of home building started again in earnest, would be of incalculable value to the building and loan associations and real estate operators.

... Fuss around as you please about other plans, but the fact remains that we will not have profitable business in the United States until home building begins in earnest.

W. HUME LOGAN

Louisville, Ky.

### What, Nothing?

Forum:

You know, I dropped all reading of all sorts, including architecture, for some years back — but you got me for THE FORUM for a few months and it's good, only the pictures all reflect the "nothing new" yet — except Saarinen's Eternal Vertical — ad nauseam. Sayonara.

DANIEL KEARNS

Clearwater, Fla.

# Their Debt to the Architect



CHILDREN, no less than their elders, are happiest and work best in agreeable surroundings. If boys and girls today find acquiring an education a pleasanter task than their parents did, a fair share of the credit belongs to the architect.

The depressing structures so common a generation ago are gradually making way for school buildings of more attractive design. Buildings that not only provide a more congenial environment, but offer adequate safeguards to health, and security against the ever-present menace of fire.

Any school building, large or small, can be made fire-safe economically by using Kalman Floor Construction, consisting of Kalman Steel Joists and bridging, 2-in. concrete floor slab, and plaster ceiling. A floor structure built in this way, while costing only a little more than inflammable construction, withstands a 2-hour fire test.

In addition to offering fire-safety, Kalman Floor Construction makes a school building

much more efficient. Because less noise travels through a floor built with Kalman Joists, sounds overhead do not disturb the classrooms below. And the floor structure never shrinks, to cause the formation of cracks where the floor and walls meet, admitting cold air and insects.

Kalman makes two types of steel joist: the Kalman Joist, a one-piece steel truss, and the MacMar Joist, a steel truss assembled by pressure welding. Both types have been extensively used, not only in schools, but in all types of occupancy buildings.

#### SCHOOL BOARDS Know KALMAN STEEL JOISTS

Many communities are planning additional school facilities. The use of Kalman Steel Joists offers such decided advantages in building schools that we are bringing them to the attention of school officials through a program of consistent advertising. When you specify Kalman Joists for a school building, you are specifying a product that your client knows and the advantages of which he appreciates.

## KALMAN STEEL JOISTS



KALMAN STEEL CORPORATION, Subsidiary of  
Bethlehem Steel Corporation, General Offices: Bethlehem, Pa.

# *Stainless* STEEL FOR TRIM



• Stainless steel lobby doors and trim add a welcoming note to the new Earl Carroll Theatre, New York



• Stainless steel does not pit, chip or peel. From the unfinished back all the way through to the distinctive bright surface it is uniform in composition.

Stainless steel is forever free from stains, tarnishes and surface oxidation of every sort. It requires no lacquers or other surface treatment to guard against rust and corrosion.

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# THE FORUM OF EVENTS



Wide World

Hudnul corrals Sweden's Ruhtenberg

## EDUCATION

COLUMBIA UNIVERSITY students in architecture who have predilections for the extremer forms of modern design may now have the cachet of studying under an authentic exponent of the art, Jan Ruhtenberg of Sweden, who has just been added to the professorial staff.

Mr. Ruhtenberg was born of Swedish parents in Riga, studied at the University of Leipzig and was associated with Mies van der Rohe in Berlin. Subsequent association for a short time with the Museum of Modern Art in New York and the practice of architecture in Stockholm have provided a fitting background for the teaching of the International style.

NEW YORK'S YMCA schools are demonstrating their up-to-dateness with the announcement of a course in air conditioning. This is designed to give anyone, professional or layman, a comprehensive view of the subject and enough technical information to provide a basis for more exhaustive study.

Instead of treating air conditioning as a separate subject with little relation to experience this course will attack the subject from the physiological view point. The relation between the phenomena of bodily function and the evaporation of water will be the basis of discussion.

CARNEGIE INSTITUTE OF TECHNOLOGY believes that the time is now ripe for a course of instruction in Industrial Design. Feeling that there is a body of experience of general usefulness as a preparation for a variety of related professional art work, and that a student with such a foundation enjoys a number of advantages unattainable through a program involving premature specialization, the Institute will endeavor to supply three major benefits.

These are an opportunity to pick a special field with an intelligent awareness of its character and possibilities; a consciousness of the essential unity of the arts; and a foundation of enough breadth to encourage adaptability.

To this end the student will spend the first two years in general art studies to establish a truly creative approach to the problems of organization of form and color. At the beginning of the third year specialization will start with the application of the acquired techniques of thought to the reconciliation of esthetic and purely practical considerations. With this goes the study of plants and actual production in Institute workshops.

With all this technical work will go non-technical courses designed to widen the student's general horizon. These comprise such subjects as the history of the development of all the fine arts, a reading acquaintance with at least one foreign language, the writing of English, and optional courses in economics and psychology.

## SMALL HOUSE AWARDS

FIRST prize for houses of eight rooms and under in the seventh annual Small House Competition held by *House Beautiful* went to Harvey Stevenson and Eastman Studds, architects of New York, for the residence of R. C. Mann at Locust Valley, N. Y. Second prize in this class went to William Wilson Wurster of San Francisco, for the E. C. Converse residence in Carmel.

First prize in the class of houses of from nine to twelve rooms was won by H. Roy Kelley of Los Angeles, for the James M. Irvine residence in Santa Monica, and second prize to Waldron Faulkner of New York, for the Allen T. Klots residence on Long Island.

In a new class of houses of new construction and non-period design the sole prize was awarded to Richard J. Neutra of Los Angeles, for the residence of cinema actress, Anna Sten (Mrs. Eugene Frenke).



International

One unit in Moscow's building boom

## RUSSIAN RADIO

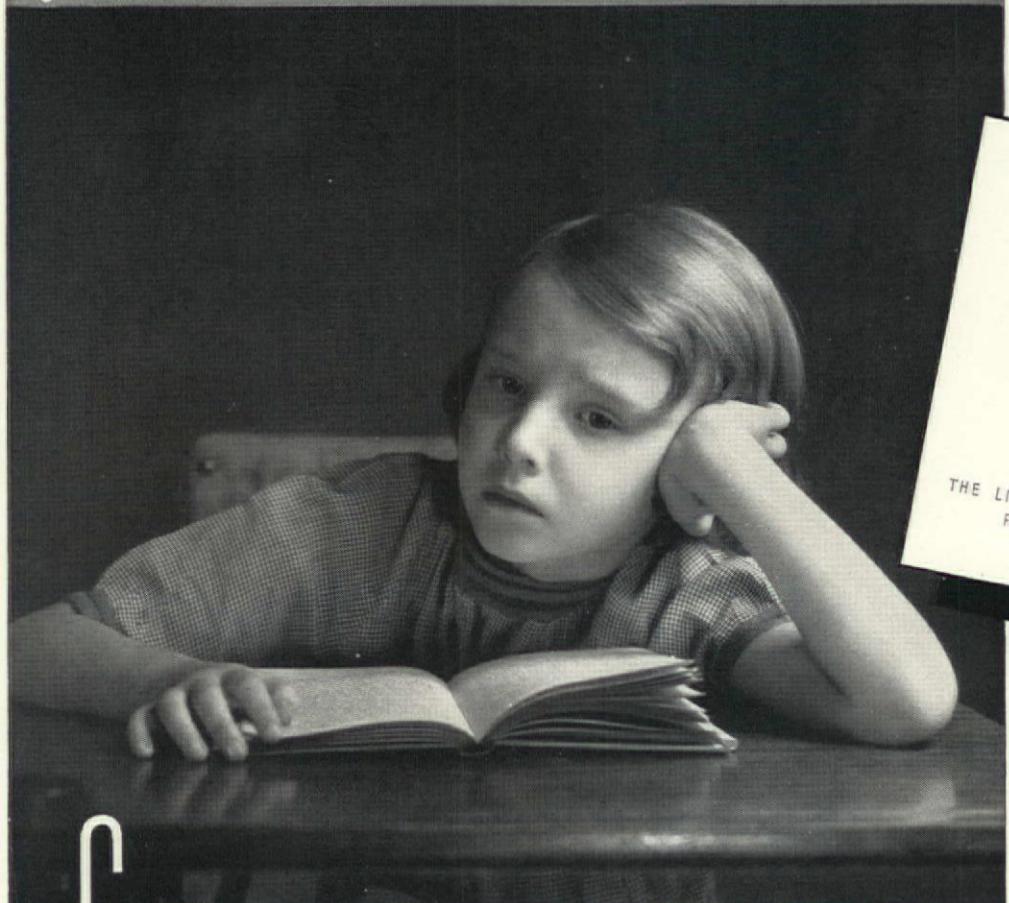
TALK about a town on a boom! This is it. I never saw as many buildings going up in my life." Thus did the peripatetic Will Rogers wire the *New York Times* from Moscow, August 28. One of the new structures contributing to the boom is the new Radio Palace designed by architects Dushkin, Mordvinov, and Solomonov. Without the mast the building is to be approximately 280 ft. high and broadcast on ultra short wave. The design is the result of a competition in which the architects were required to use foundations and walls from the uncompleted Miusski Cathedral started before the World War.

## HANDKERCHIEF MAP

DERIVING his inspiration from a rare old cloth map printed about 1792, City Planner Frederic A. Delano has had made a handkerchief map showing the celebrated L'Enfant plan of Washington, D. C., together with some of the surrounding country.

The map, drawn by cartographer Mildred G. Burrage of Kennebunkport, Me., is being printed in six different colors and is sold for one dollar each by the American Civic Association. The income so derived is to go to the George Washington Memorial Parkway Fund for the purchase of key properties within the proposed park area.

*Gee but Mother will feel bad!*

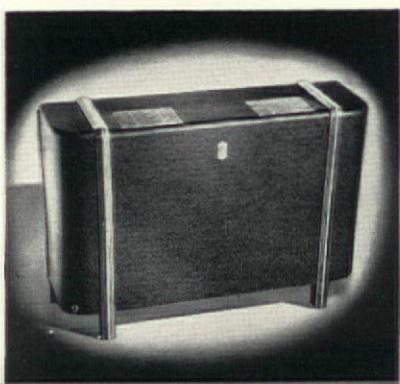


## **S**HE WAS THOUGHT TO BE DULL — but it wasn't that at all

MORE and more the effect of improper schoolroom air conditions upon the work and health of school children is being understood. When rooms are overheated, children become dull, inattentive and fatigued. Such conditions, if they occur frequently, are certain to reflect themselves in the report card at the end of the month. The problem of maintaining air conditions which keep children quiet and mentally alert is a difficult one; but, happily, it has been solved.

The high velocity jet discharge of the Univent and the Her-Nel-Co Air-Conditioner makes possible the introduction into the class room of low temperature outdoor air when it is necessary for cooling. Ventilating units which lack the high velocity jet, must limit the introduction of this cool outdoor air in order to prevent drafts. A Herman Nelson System of Air Conditioning makes possible the maintenance of a desirable temperature, so necessary for schoolroom efficiency.

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**THE  
ARCHITECTURAL  
FORUM**

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PALACE OF THE FINNISH DIET, HELSINGFORS . . . . J. C. SIRÉN, ARCHITECT

THIS CAN BE NOTHING ELSE THAN THE CAPITOL OF A FREE AND BEAUTY LOVING PEOPLE

THE  
ARCHITECTURAL  
FORUM

VOLUME LXI

OCTOBER, 1934

NUMBER FOUR

FUNCTION, PRECISION, PASSION

Is architecture a mechanical assembling of prefabricated and standardized parts, an expression of soul's pain, or the collective aspiration of man

BY LEONARD COX, A.I.A.

BEFORE the so-called Renaissance the fine arts were carried out along well-defined lines. Changes introduced from time to time as technical knowledge gradually developed were always in the same general direction. The evolution from the Roman basilica to the Gothic cathedral may be followed step by step and the inevitableness of the final result conclusively demonstrated.

As for the personality of the artist, it is not mere accident that the names of most of the artists of the Medieval period are unknown. Their names and personalities were not important. Their work was. They had a convenient, acceptable, and fairly sound "frame of reference" by which to measure the worth of what they were doing.

Three men changed all of this. Contemporary in their relation to the epoch in art that each produced, Michelangelo, Rembrandt, and Beethoven possessed super-human physical powers as dæmonic as their mad souls. No merely mortal "frame of reference" could be a standard for such men as these. They had to storm Heaven itself and sup with the gods. With one magnificent gesture they threw overboard everything hitherto held sacred and stated the epochal theorem that the whole purpose of art was to express the anguish and despair of the artist.

Unfortunately their followers laid too much stress on the emotional appeal of the master's work and failed to comprehend the enormous technical equipment each had painstakingly acquired before he snapped the thread of tradition. They neglected the fact that no mere declaration of independence could really rid these three of the early patterning of their fundamental thought.

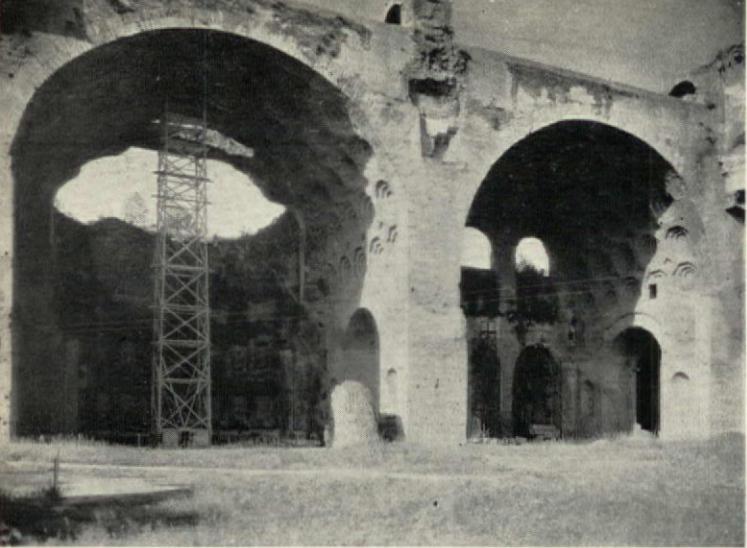
As a result the arts became more and more something divorced entirely from reality, pulled hither and yon by

conflicting personalities or groups. One great success in the expression of self and a host of imitators would attempt to exploit the reputation so created. For every sincere man striving to say something vital there were twenty mere charlatans with no firm convictions.

The invention of printing enabled the fluent writer to assume an air of authority and issue superficial glosses as pontifical truth. This rapid dissemination of incomplete, inaccurate, and often incorrect information soon brought into being a host of half-educated but completely self-assured men who rapidly began to coalesce into academies, founded originally on a basis of mutual self-admiration.

Soon these coalitions took on the aspect of offensive and defensive alliances. The great industrial revolution was bringing about the great social revolution. Money, hitherto exclusive to princes and bankers, began to flow to other hands and there arose the now familiar phenomenon of the self-made man. New markets for the sale of art works were coming into being. It became important that no outsider should be permitted to participate in the division of the spoils. A might differ with B as to whether line is more important than chiaroscuro, whether a Neapolitan sixth is or is not permissible, whether Gothic or Greek should be revived, but both were firm in the belief that they were in the direct "apostolic succession." An occasional rebel would emerge for a moment, to shout, like Hans Christian Andersen's small boy, "he hasn't any clothes on," but this did not disturb the march toward complete unreality.

Even the naturalism that appeared sporadically did not arrest this progress. Concerned with only the outward and visible semblance and making no attempt at the

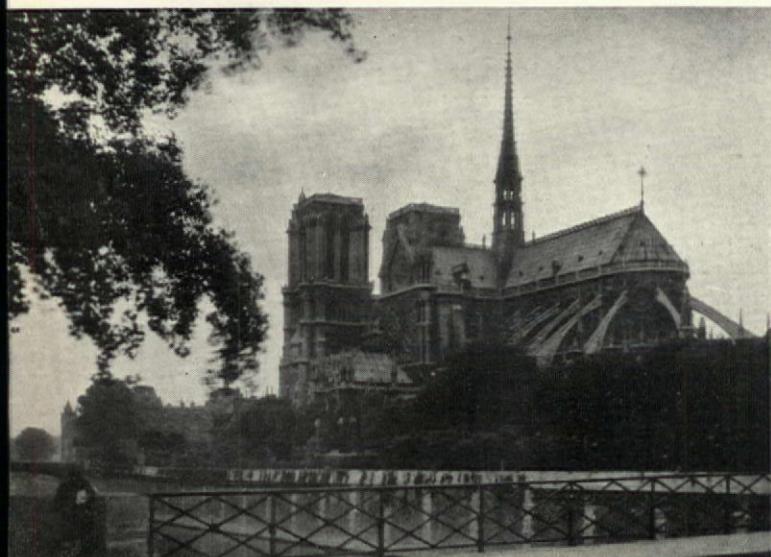


BATHS OF CARACALLA, ROME



CHURCH OF ST. PETER, ROME

CATHEDRAL OF NOTRE DAME, PARIS



inward substance, this movement degenerated to a sort of inferior photography with or without natural color.

As men of money more and more succeeded men of blood, the new millionaires learned that the possession of works of art, the costlier the better, was the sign of an aristocrat. Where else were they to be purchased than from the recognized leaders of the arts? Few of these leaders could resist the temptation to step up their production at the expense of quality. As a result there grew up a class of architects who knew no more mathematics than would get them into school and out again, and nothing of the relation of mathematics to the observed facts of biology; a class of sculptors who could not even *model* a complete human figure, let alone produce actual sculpture; a class of painters who played with fuzzy forms and wishy-washy colors; and a class of musicians who needed eloquent program notes to justify their dreary ineptitudes.

Meanwhile man in the mass, man as he really is as distinguished from the coruscant mediocrities who had bludgeoned their way to eminence, was, as usual, suffering from a complete lack of that which might salve his soul's anguish. He saw those whom he had been taught to regard as the professors of truth and wisdom oh-ing and ah-ing about the work of this man and another. At each in turn he looked, with all his inarticulate longing for some thing therein that might carry to him some hope of his eventual surcease. It was not there and in his agony he thrust all art and artist from his scheme of things and sought salvation in change or overturn of social, economic and political order.

This not unnaturally lent strength to doubters in the arts. Encouraged by the philosophic support of small coteries of friends, they began to trace out new paths. Some went back to first principles as they saw them to begin anew where the authentic old masters had left off. Others, deciding nothing good was left from which to work, erected entire philosophies of art upon a foundation of purely contemporary credo.

All, in the beginning, were sufficiently honest to realize something of good in the wildest departure from accepted technique. Post-impressionist, cubist, futurist — all had some justice in their contentions and all had profound influence. The various schools of painting had the earliest chance to influence the large audiences. Architecture, sculpture and music were not slow to follow, but the opportunities for public exposition were not so many. Gradually the public saw that behind an appearance of complete insanity the "wild men" were really trying to get at something that had been long lost. There began to be evident some connection between a work of art and the realities of inner existence. Soon the rebels were elevated

*All three buildings are characterized by precision of the highest order. That of the baths of Imperial Rome is the passionless precision of the engineer, while that of the great church of Papal Rome is passionate almost to the point of frenzy. The pomp and circumstance are as functionally proper in the secular building as improper in the ecclesiastical. Notre Dame of Paris combines with its precision the passion of the compassionate to give perfect functional expression to the idea of worship of an all-seeing and merciful Deity.*

through the degrees of minority and opposition to the dignity of equality with the academy.

Revolt, academy, revolt, academy, is an ineluctable morphological rhythm. Hence the new academy produced, by fission, a third academy that also came to rapid maturity. So the matter stands at the present day. In architecture three leading academies dominate the scene. These agree two by two about some things and disagree about everything else. They have now attained sufficient importance and security to make their fraternal squabbles much more amusing than any effort toward the goal they should all be seeking. As a result man once more finds no help in his travail and is once more about to discard artist and art and find the resolution of his problems elsewhere.

Even now he turns to the industrialist and the engineer. Already the prefabricated house, assembled from standardized parts, is being considered as the solution of one part of the problem. Design and construction of many other types of building have reached virtual standardization. The functionalist helps by his insistence that architecture must become a machine art concerned with nothing but purely mechanistic function. The eclectic modernist helps by the very catholicity of taste which is his boast, while the classicist contributes his mite by patiently serving up over and over again the stale crumbs of the past.

Are then all the academies wrong? They are. The classicist will not realize that most of his beloved forms were, even in their heyday, only symbols of something now vanished from the earth. The eclectic does not realize that no amount of sophisticated taste can ever take the place of understanding. The functionalist errs in his insistence upon function without real comprehension of what that function is.

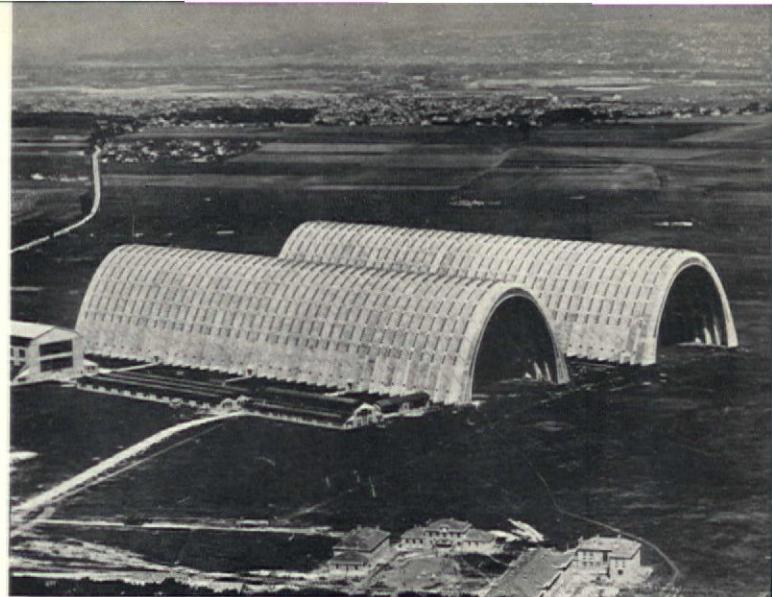
The classicist and the eclectic wrongly assume that what they call art should be a product of personal "feeling" without relation to the demand of mankind at large. Contrary to popular belief the suppressed classes of our world today are as avid for beauty as ever, but they have for so long done without that they have become incapable of articulate demand.

The eclectic and the functionalist wrongly demand a complete break with *all* precedent. They forget that in the architecture of the past is much of the people. These have been accustomed, for example, to worship their gods in a particular sort of building until that type of building has come to have a ritual and functional significance that may not be ignored.

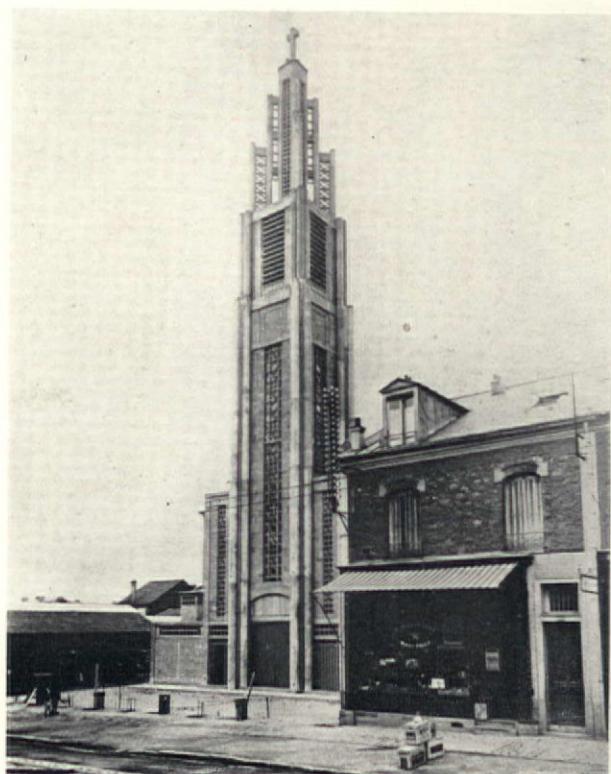
The functionalist and the classicist mistakenly assume that a proper "style" may be determined by *ex cathedra* pronouncement.

What then is the answer?

*Precision as refined as that of a cathedral and perfect understanding of the function combine to make the French hangars and the Finnish bandstand genuine works of art in all but passion, proving that a work of art must have something more than mere perfection of usefulness. The Raincy Church has none of these qualities. Instead there is nothing here but muddy thinking, and some sort of confused metaphysics that tries to carry over the Gothic flying buttress into today's reinforced concrete construction.*



DIRIGIBLE HANGARS, ORLY, FRANCE  
FREYSSINET, DESIGNER



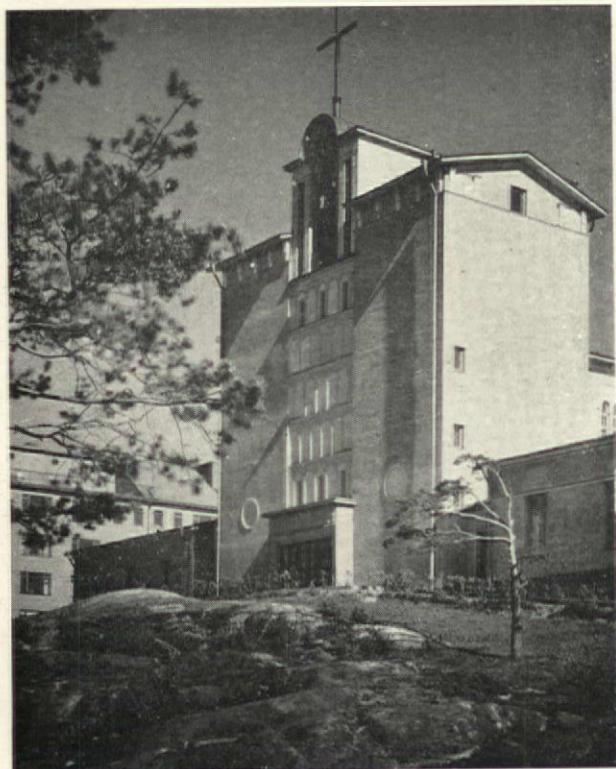
CHURCH AT RAINCY, FRANCE  
CH. & AUG. PERRET, ARCHITECTS

BANDSTAND, WIIPURI, FINLAND  
UNO ULLBERG, ARCHITECT





EXPERIMENTAL HOUSE, OSLO



TÖÖLÖ CHURCH, HELSINGFORS  
HILDING EKELUND, ARCHITECT

A return to the passionate attempt to express man's *collective* aspiration by means of works of art. To arrive at the ability to do this has, in the past, required centuries of gradual evolution. Today it need not take so long. The new sciences of the mind are an instrument such as the artist of the past never imagined. Analysis carried on all over the world is rapidly developing a statistic of psychology which can be of incalculable aid. Not much direct research has yet been done except with color and simple forms, chiefly because the practitioners of the science have concerned themselves more with therapy than first causes. So soon as the artist desires to know the real meaning of the column, the lintel and the arch in terms of human reaction, the scientist will endeavor to find out.

This should lead to a new symbolism, better than the old, that will not need legend and literary backing to

explain or maintain it. Being really human, it will be susceptible of such evolutionary change as time or circumstance make necessary.

Meanwhile architect must be artist, "a learned man." To devote himself to the purely subjective display of his own emotional reactions will not be enough. Only an authentic prophet contains within himself enough of pure inspiration to speak obvious truth without acquired knowledge.

He must, however, be a *really* learned man. It will not be enough to give the people of the world "what the public wants" as expressed in their own terminology. No man knows what he wants accurately enough to communicate that want directly. His language will never be else than an image behind which must be sought the real meaning.

The artist must be a man of passion. He must care and care mightily that there is so much imperfect in man's fate. If not fired with that passion, he is not a fit person to be entrusted with the human soul. Sympathy and understanding are not enough.

The apotheosis of the gadget and the standardized prefabricated what-not is not architecture. Architecture is "the art of building" and art is "skill or learning," "know-how" in the vernacular. The function of a house may be correctly said to be a "machine for living" but unless living is a purely mechanical process concerned solely with eating, sleeping, and the elimination of bodily wastes that function is rarely expressed today.

There are in this world and, according to Oswald Spengler, will be again "fellaheen people" to whom this is all of life. Are we to be betrayed to this fatal end by our artists? Is the Decline of the West to be a fact? Are we all poor doomed fools who cling to the image of a full life where beauty one man makes evident brings consolation to the rest?

Not if artist becomes once more man of passion. Not if the artist cares so much about the real truth that he will spend his life in patient preparation for the moment when he has found one little thing real to pass on to others. Modern conditions give him tools of colossal capabilities. He must use them with care, with reverence for the danger that lies in their misuse, but above all with holy, tender passion. As they are tools of precision, they must be used precisely. The same instrument that is capable of expressing the delicate nuance cannot express grandeur or solemn pomp. Each must be used in its fashion to produce a whole, a contrapuntal organization of many themes, so complicated that it shall have in it something of every man and so simple that it shall have in it much of all man.

*Pleasant in appearance because it has some of the desirable qualities of a work of art, and of a house, this Norwegian experiment can hardly be called really successful as either. The church attempts once more to substitute for passion a very fine taste and high degree of sophistication. So fine is the precision and so nearly successful the substitution that it is something of a shock to realize that the cross is almost the only thing that tells us that this Finnish building is a church*

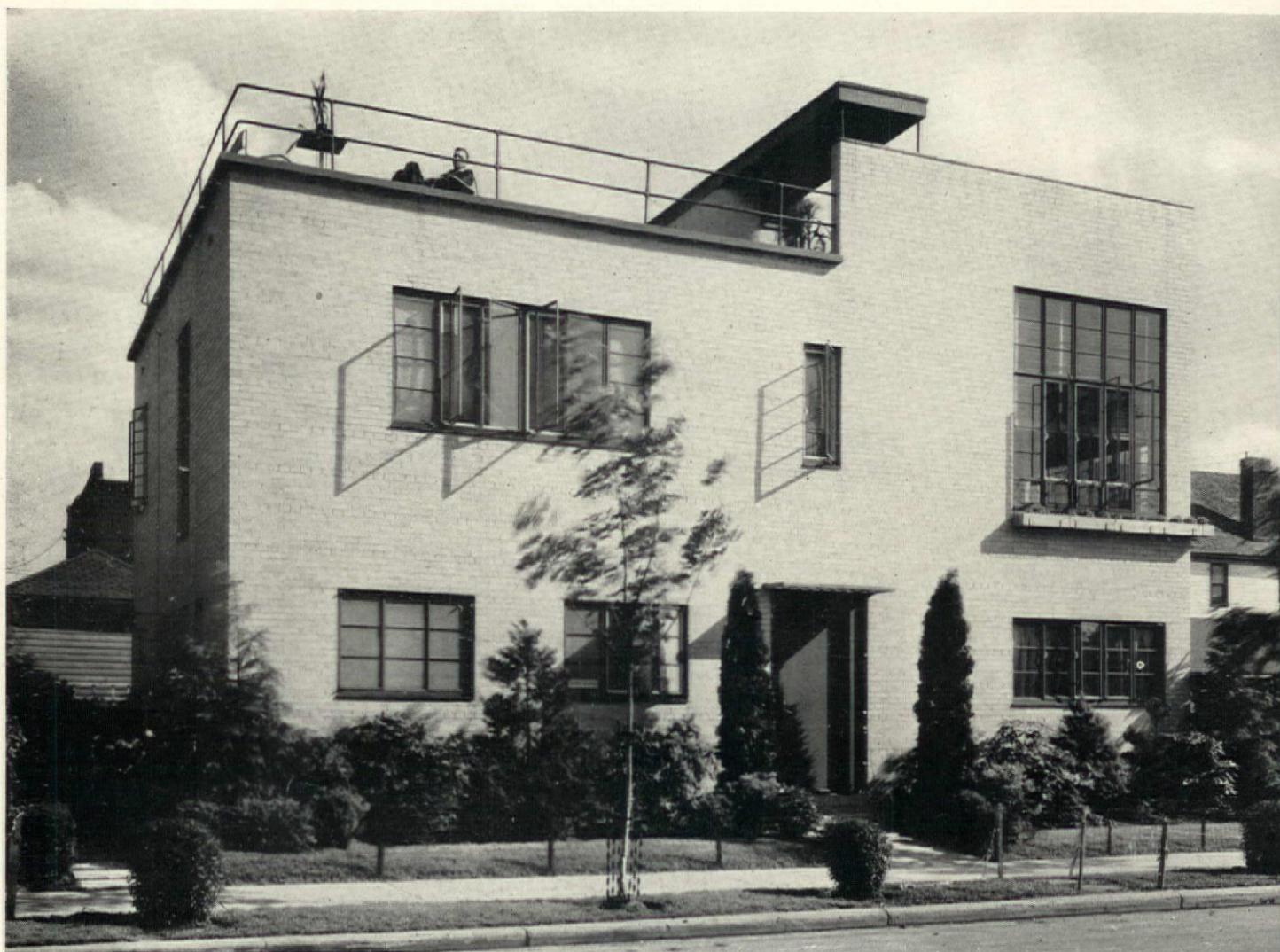
HOUSE OF R. F. ELLIOT  
LOS ANGELES, CALIF.  
R. M. SCHINDLER, ARCHITECT

THIS house was placed high on the lot to gain the best outlook. The closeness of neighboring houses led to the extensive use of trellis which forms a sort of *leit-motif* for the whole exterior design. By the ingenious use of a high ceiling in part of the living room and a correspondingly high window an effect of great height throughout the room has been gained

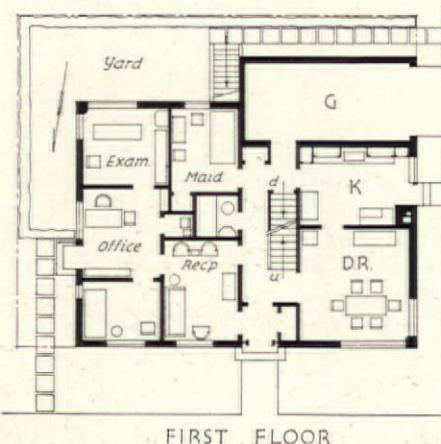
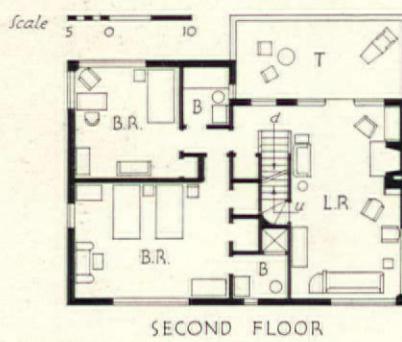


*Jessie Tarbox Beals*

## FOUR HOUSES IN THE MODERN MANNER

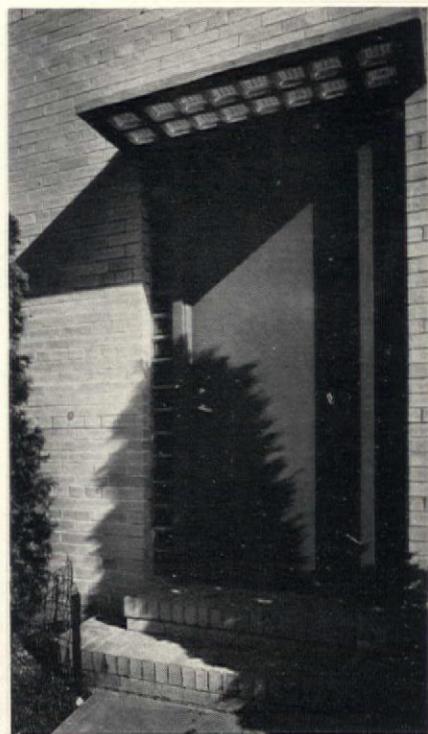


Photos, Ande...



HOUSE AT RICHMOND HILL, LONG ISLAND  
HOWARD R. MEYER AND  
HERBERT LIPPMANN, ARCHITECTS

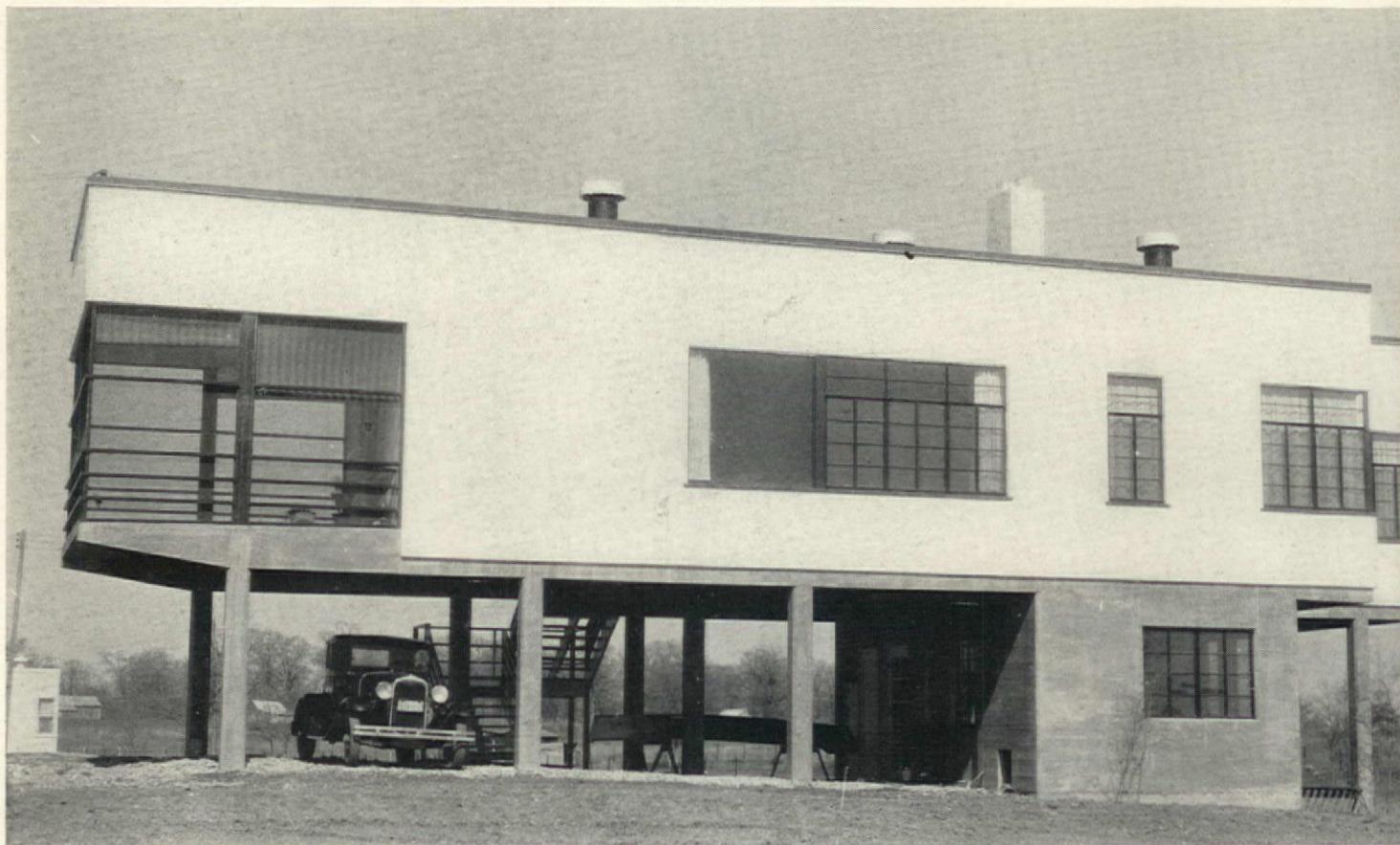
THIS modern house is really modern in that the design is the most direct and simple solution of the problem. The corner lot upon which it is situated is small and the owner, a doctor, required so much first floor space for professional use that the living room had to be on the second floor. This makes the screened terrace over the garage a logical result. The small size of the lot also minimized any form of landscaping or gardening. The prevalence of flat roofs in the vicinity suggested that a flat roof would be the thing here. Combination of these two factors made a roof garden inevitable. In every case nothing has been done without a reason that must be immediately apparent upon inspection of the house.



The sidelights and the canopy over the main entrance door are made of reenforced concrete and ordinary sidewalk vaultlights. All doors are flush with dull chromium hardware.

EXTERIOR walls are of light gray brick. The framing is of wood joists hung in metal stirrups from the brick walls and the interior partitions are of stud construction with plaster finish applied on metal lath. With tile bathrooms, brass water piping, and one pipe vacuum steam heating system the total cost of the house completed was only \$12,000.





THIS is LeCorbusier's "machine for living" in full flower. The architect is much to be congratulated upon having produced so much house for so little money. It is almost incredible that the total cost was only \$5,400.

It is a debatable point if he should be congratulated upon some of the planning. Certainly the reasons for it are not immediately apparent upon scrutiny of the plans and photographs. True functional design is its own best explanation.

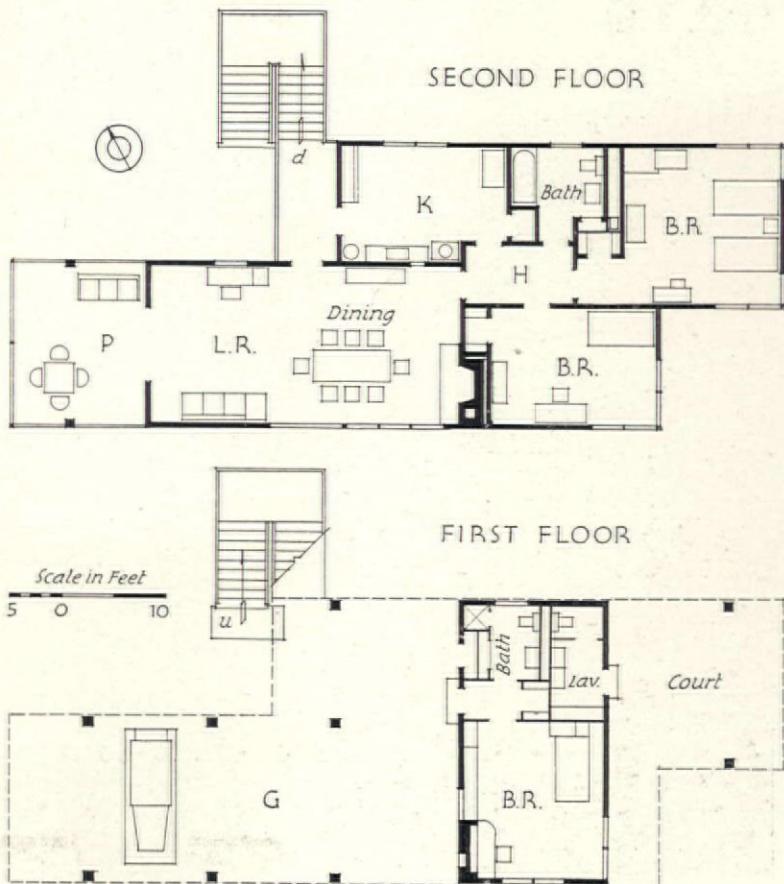
The interiors are quite lovely. Incidentally, the furniture was designed by the architect especially for this house.

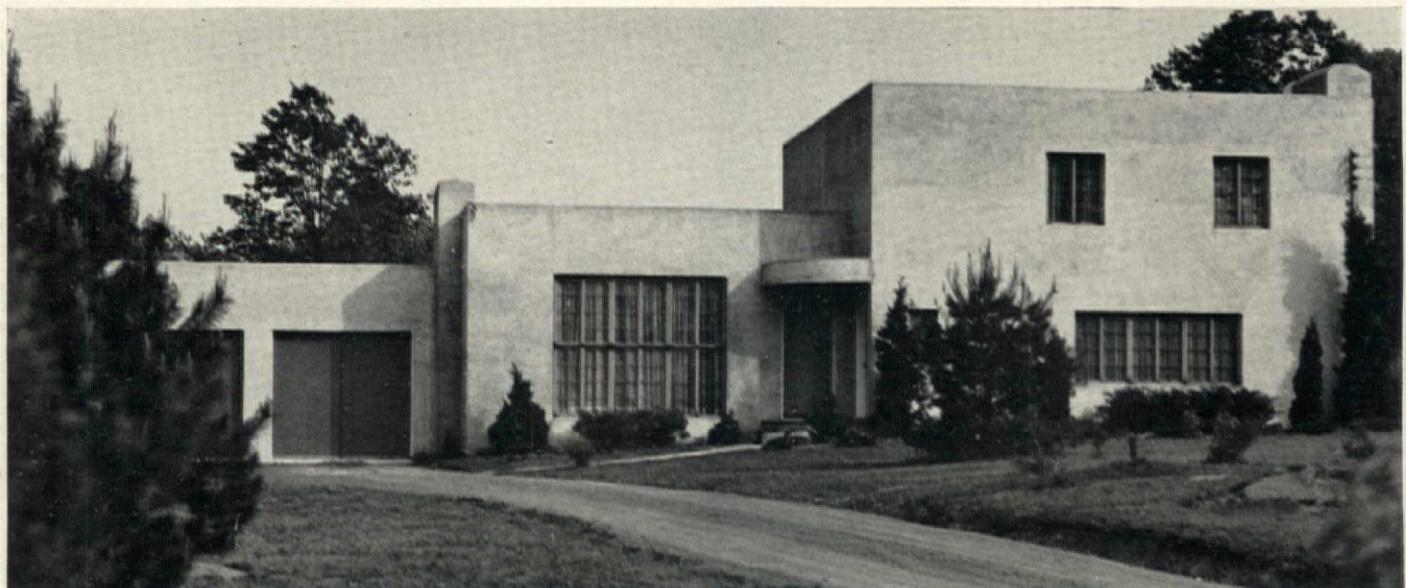


WEEK-END HOUSE, CROSS LAKE, LA.

WILLIAM B. WIENER, ARCHITECT

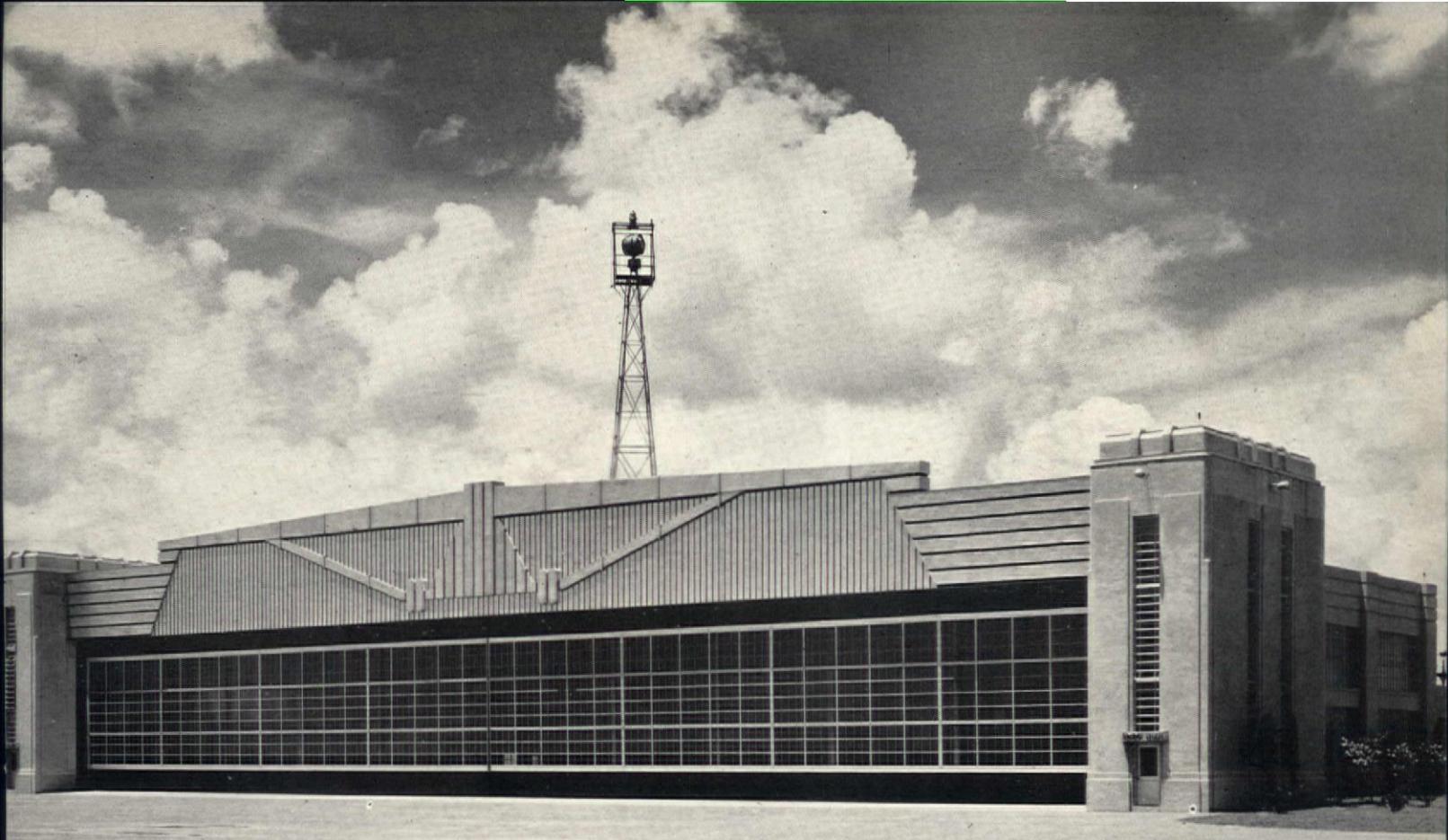
FOOTINGS, columns, first floor walls and the portion of the second floor exposed are all of reenforced concrete. The walls above are of frame and stucco. The roof is of built-up construction without gutters. It is drained by a single down spout located centrally. There is a space between the ceiling and roof which acts as insulation and as a plenum chamber. Registers in the ceiling and ventilating hoods in the roof promote the ventilation of the rooms





HOUSE OF J. W. McCOMBS, NEW HOPE, PA.

MICHAEL McCOMBS, ARCHITECT



Photos, McDaniels, Inc.

*Hangar doors open in one or two pieces to 200 x 26 ft. The conventionalized airplane emphasizes stress lines*

## SHUSHAN AIRPORT, NEW ORLEANS, LA.

Usually an airport must be fitted to the ground; here the ground was made to fit the airport. Six miles from the business center old oyster shells solved a problem and saved money

WEISS, DREYFOUS & SEIFERTH, ARCHITECTS

LARGE cities find it difficult, sometimes impossible, to provide adequate terminal facilities for air travel within or even near the city limits. New York's commercial airport, for instance, is in another State. Eventually some remedy, possibly roof-top landing fields, will have to be found if air travel is to expand to the dimensions of which its sponsors dream.

Until last year, a too-distant field hampered New Orleans' aviation growth. Twice since 1928, when the first regularly scheduled commercial plane hopped off from the delta city, the airport site has been shifted, each time nearer the center of business. The last shift followed the completion in 1933 of Shushan airport, thought by fliers to be the equal of any in the country.

The airport takes its name not from a local river, not from a Louisiana Indian fighter, but from the man who, as president of the Orleans Levee Board, directed the project from conception to completion — A. L. Shushan. Charged with the maintenance and construction of New Orleans' more than 100 miles of levees for flood control the Levee Board had already broadened its functions to become an instrumentality for carrying out large civic improvements difficult to finance under other authorities.

Among these were an \$18,000,000 Inner Harbor and Navigation Canal, and an \$8,250,000, 1,726-acre, lake front development. It was no task therefore for Mr. Shushan to envisage a new \$3,000,000 airport.

The success of the lake front development scheme gave him and his associates the clue to what may turn out to be the typical airport location. There were pieces of land in or near the city limits suitable, at the time, for such an airport, but danger lay in infringement by future developments, and in possible interference with the growth of the city. Furthermore, the Levee Board sought to avoid the legal tangles and comparatively large land acquisition cost necessarily involved. On the other hand, lying beneath the waters of Lake Pontchartrain were lands already owned by the city. Through the lake front development the Levee Board engineers had behind them rich experience in building retaining walls and pumping hydraulic fill. The Levee Board had powers sufficient to undertake the operation without public bond sale.

After sanction by Huey Long, then Governor, had silenced opposition, the work was authorized. The Levee Board's chief engineer, John Klorer, was placed in charge; and the architecture, design of power and water plants,



### ENTRANCE FRONT

*Light tan cement finish with aluminum trim around entrance door and control tower. The flagpole on axis is a mistake*

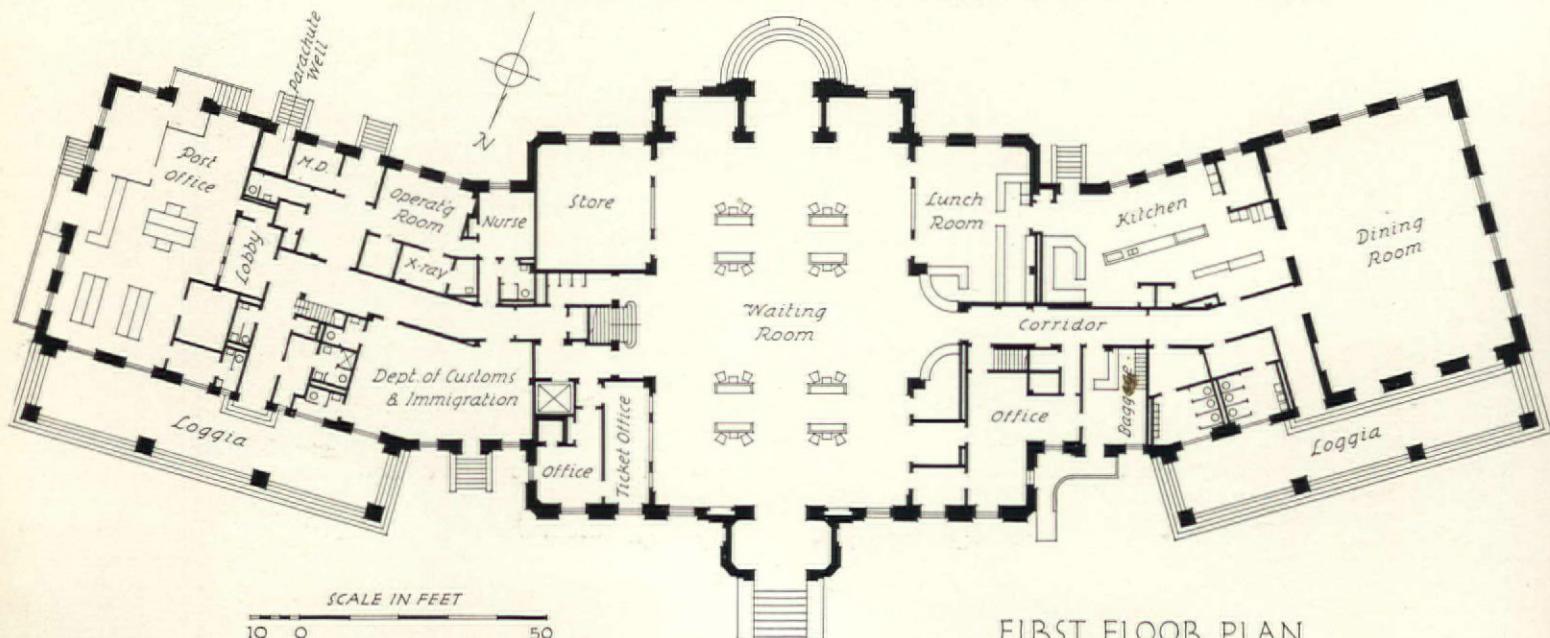
sewage disposal system, and landscape work was entrusted to Weiss, Dreyfous & Seiferth, architects for Louisiana's State Capitol at Baton Rouge. (THE ARCHITECTURAL FORUM, December, 1932.)

Given the fundamental concept of an air field on filled ground jutting into the lake, determining the size and shape of the area to be built became the No. 1 problem. The length of a runway has been pretty well standardized at 4,000 ft. for anything except the unusual loadings of trans-Atlantic fliers. A study of United States Weather Bureau records for the past twelve years showed the prevailing wind direction to be southeast. The main runway was therefore laid down on the map southeast to northwest. Another runway of similar length running due north and south was laid out to intersect with the first one at the outer end. This triangular shape had two further advantages. It reduced the amount of hydraulic fill neces-

sary as the water got deeper, and it offered the best possible shape for resisting storms. Two shorter runways each running at right angles to one of the longer ones make it possible for the flier to land up wind no matter what its direction.

Borings and test pilings revealed that bottom conditions were such that neither rip rap sea walling nor coffer damming, the two conventional methods of constructing a sea wall, could be used. It was finally decided to construct a wall of two rows of concrete sheet piling with fill between. The two rows were driven 15 ft. apart and tied together with both tension and compression members. The former were made of 2 in. copper bearing steel rods and the latter of 10 in. or 12 in. channels, both types encased in concrete. The tops of both rows were given an unusually heavy coping designed for beam effect. The whole was filled between the skins with dead oyster shells.

*First floor plan, below. An interesting adaptation of conventional railway station plan. Note parachute well from floor above*



FIRST FLOOR PLAN



#### LANDING FIELD FRONT

*This front seems more interesting than the other on account of the dominating tower. The loggias help reduce mass of wings*

This unusual material was chosen because it could be obtained very cheaply within short water haul of the site and because it would also act as a gigantic drain around the whole perimeter. The same material was used as a backfill both inside and outside the walling to guard against the overturning forces of settling hydraulic fill.

In deeper water an hydraulic fill of heavy clay was pumped against the wall to reduce the water depth to about 4 ft. which is kept from washing by two superposed fascine willow mats of the type usual for levee work on the lower Mississippi. These were each 2 ft. thick, woven in 1,000 ft. lengths. The total length so covered was 6,314 ft., the upper mat being 40 ft. wide and the lower 60.

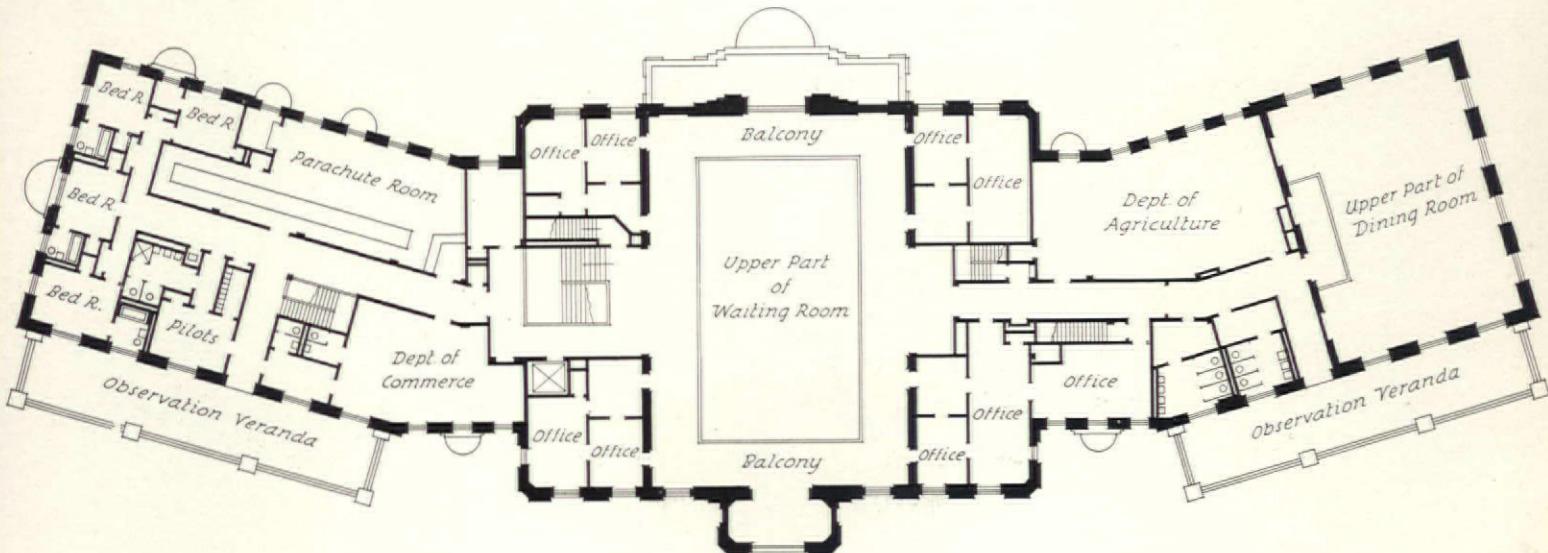
The area within the wall was filled by hydraulic dredges. It was found impossible to carry out completely the original intention of having the lower levels clay and the upper sand, but that general principle was followed.

Spillways left to provide drainage in the remote contingency of storms flooding the field aided in the placing of the fill.

The outer edges of the field are drained to and through the retaining walls by virtue of the joints between the piles themselves and by weep holes. The shell fill helps to prevent the sand from washing out. The central portion of the field is drained through an under drainage system of concrete pipe to a central trunk which discharges into a drainage canal. This drain flows away from the lake due to the fact that the difference in level between the field and storm tide level is too little to permit draining into the lake, while pumps maintain the canal on an even level.

Possible subsidence of the fill made it impossible to construct the runways of concrete, as they would have been broken to pieces in a very short time. After various

*Second floor plan, below. Good circulation and division of space. New item for architects is parachute room. This must be big enough to lay out 'chutes for folding*



SECOND FLOOR PLAN



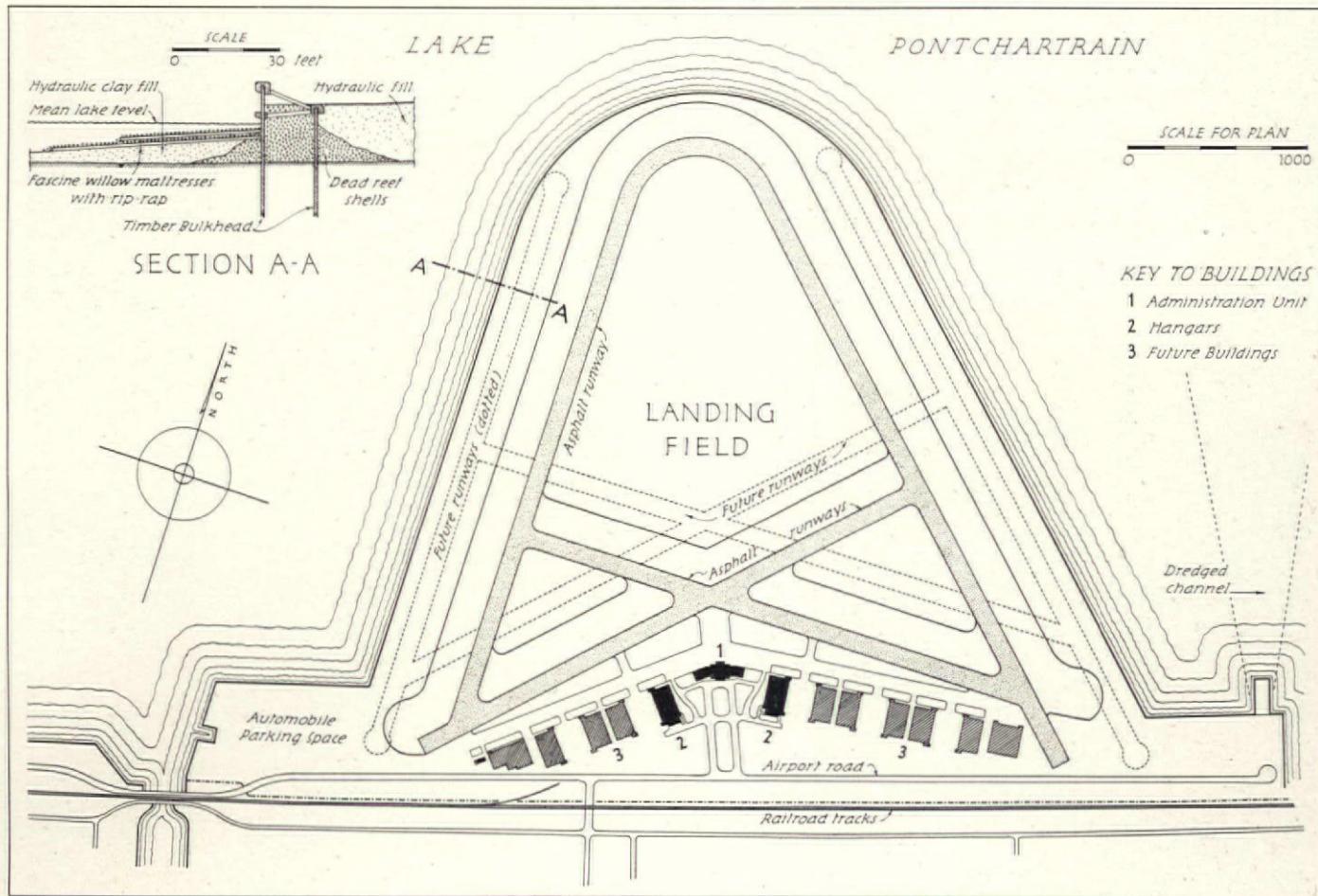
#### WAITING ROOM

WALLS are marble in prevailing tones of red, cream and buff. The floor is of terrazzo of the same general tone as the walls. The dividing strips are of white metal. The border of the compass in the center indicates the true direction of the principal cities of the world and the airline distance from the Shushan airport. The ornamental plaster ceiling is covered with glazed aluminum leaf with panels of acoustical material. Lighting is from bands of cast heat resisting glass in the ceiling and a central chandelier. The railings around the mezzanine lounge are of white metal. The murals are by Xavier Gonzalez of New Orleans, depicting the various sections of the world invaded by the airplane

#### DINING ROOM

THE color scheme is made by contrasting white metal with American walnut. The terrazzo floor and marble base are of soft tones to harmonize with the walnut. Here also the ceiling has acoustical panels and concealed lighting behind bands of cast glass





GENERAL PLAN OF AIRPORT

*The direction of the runways gave this plan its characteristic shape. The aviator can always land against the wind*

experiments with local sands and asphalt binders, the runways were finally made of a trademarked asphalt compounded especially for the purpose. These are 4 in. thick and 100 ft. wide. No other than purely conventional methods were employed in the construction of the roads to and within the airport, nor of the ramp for hydro-airplanes.

**Administration Building.** In all this as well as in the design of the buildings proper the architects had their part. When therefore they came to the general layout of the buildings they motivated their plan on the same reasoning that led to the original layout of the field. As a result the Administration and Control Building sweeps back from the central tower in an obtuse angle. The angle is flatter than that of the runways before it on the theory that more space is needed in the center than at the ends. The lines of hangars prolong the line of the two wings of the main block. Only two of these have been built but the placing of eight more is indicated.

The central building houses not only all the administrative and control facilities necessary to a large airport, but, since New Orleans is also a Port of Entry, space for Customs, Immigration, Agricultural authorities, and a post office is included. Offices are provided for the transport companies and allied interests. The passenger accommodations comprise a two-story waiting room with mezzanine gallery used as a lounge; lunch room, dining room for more leisurely meals, ticket booths, first aid

station, and toilets. All are very elaborately decorated and furnished. At first sight it almost seems as if the luxury note had been overdone, but second thought realizes that while one can put up with a bare pier when boarding a luxurious liner the bareness is tolerable only in view of the comfort to come. The best airplanes to date cannot be said to furnish so great a degree of comfort as a ship and it is proper that the terminal facilities should make up for this lack as much as possible.

The central tower is the control station for the entire field. It is so designed that from it can be seen every part of the field and the air approach in every direction. All glass is of a special composition designed to reduce heat transmission and glare. On the roof of the tower will be a weather vane and an anemometer. All field lights, including directional field and landing lights, are operated from the control room. The selection of these latter will be done with reference to the wind direction by automatic switches connected with the anemometer. Space on the roof behind the tower is provided for the ceiling indicator and for the meteorologist's balloon work.

**Hangars.** The hangars have each a clear floor space of 200 x 100 ft. with doors opening clear 200 x 26 ft. high in a single unit by electric control. Across the rear of each hangar are two fully equipped shops with locker rooms, wash rooms, and toilets. The pylons flanking the entrances contain offices, and space for instruction, etc. An extension on each hangar houses, in one case, the electric light and



#### MAIN ENTRANCE

*The sculptured ornamental panels which relieve the sharply shadow-lined facade were done by Enrique Alferez, William Proctor, and John Lachin, with others. The architects suggested the subjects and supervised the work*

heating apparatus, and in the other, the ambulance, emergency truck, and similar apparatus.

**Design.** The buildings themselves are of a modified modern design executed in a warm, light tan, cement finish. In spite of some inconsistencies, the design in general is good. The hangars are better than the main building though this is not due, as it so often is, to over ornamentation or elaboration of the more important building. With the exception of the unfortunate crucifix effect over the main door and some very minor details the sculptural ornaments are both effective and appropriate. There is, however, a letting down from the big scale of the hangars that prevents complete success.

The conventionalized airplane over the hangar doors which also expresses the lines of stress in the structure is particularly commendable.

Though there is a little too much Paris 1925 in the

interiors, the general scale is fine and the whole effect is more than merely pleasant. The mural decorations are, unfortunately, nowhere near so good as the sculpture on the exterior, and some of the ceilings are a little overdone. This is, however, infinitely preferable to the chaste aridness that is characteristic of so many interiors of this type.

In the description of the work, and in the work itself, it is difficult to say where architect began and engineer left off. The fact that the whole was not done by the same man or firm renders this still more remarkable. Further, the architecture is successfully compounded with painting and sculpture in an unusual degree, even though the actual details of one or the other may not be all that it should be. The whole development presents one of those happy integrations of architecture and engineering that the critic dreams of but seldom sees.



*Gottsch*

HOUSE OF DR. EDMOND PAUKER  
RIVERDALE-ON-HUDSON, N. Y.  
DWIGHT JAMES BAUM, ARCHITECT

DOMESTIC AND COMMERCIAL REMODELING



HOUSE OF DR. EDMOND PAUKER, RIVERDALE-ON-HUDSON, N. Y.

DWIGHT JAMES BAUM, ARCHITECT



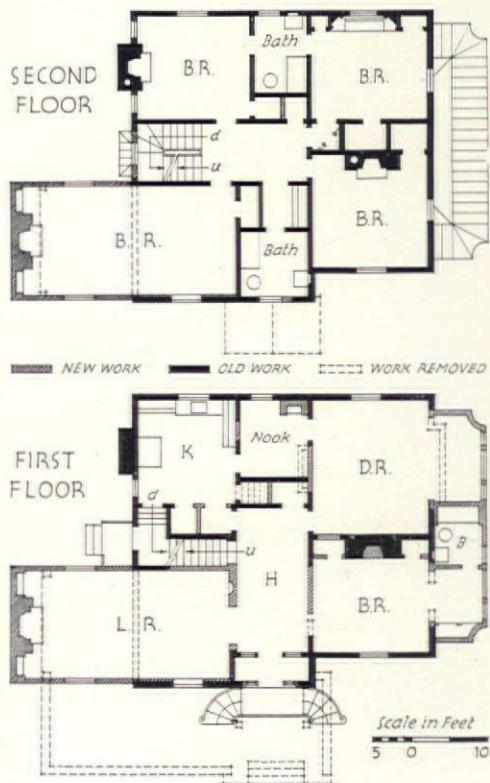
THE original house, known as the Longfellow mansion, was built in 1890 of frame construction with exterior finish of shingles on shingle lath. Comfortable and esthetically satisfactory for that day its structural value has alone survived. The architect removed the overhanging eaves and added a three-coat stucco finish on wire lath, placed directly over the existing shingles to avoid providing new sheathing. Carrying the walls up above the roof line and forming a parapet with gutters behind gave the character of the simpler forms of the English Regency. The body of the house was extended to the line of the old porches to provide more room on both floors. New sash and new shutters carried out the character already set by the parapet and the redesign of the front entrance. Other features of note are the connection of the dormers to provide more third-story space and the addition of a two-car garage in the rear at a lower level.



THE owner wanted to have a bedroom on the first floor, which of course carried with it the requirement that space be found for a bath. He also wanted to retain the bay window in the dining room because of the sunlight afforded. This problem was solved by enlarging the original dining room bay to run across the entire width of the house. The breakfast room, the kitchen closet and the coat closet were all made from the old pantry and the original back stairs.

Nearly all the walls and ceilings required replastering and the soft wood floors were in such condition that new  $\frac{3}{8}$  in. oak floors were laid over them. The entire house was redecorated, including three rooms on the third floor which were altered to provide more space. The baths were finished with colored tile and colored fixtures to match. The north bedroom on the second floor was specially finished with a hewn beam ceiling, wainscot entirely around the room, and a paneled fireplace end.

All the work was done for \$16,500, an astonishing figure for so complete an alteration and one so beautifully carried out. A new house of the same size would have cost at least twice as much.





MODERNIZATION in the best sense of the word. Nothing has been done except what was made necessary by the change in standards and methods of living since the house was originally built. Total cost, including architect's fee, was \$6,500. This included new plumbing and heating systems as well as the work obvious from the photographs

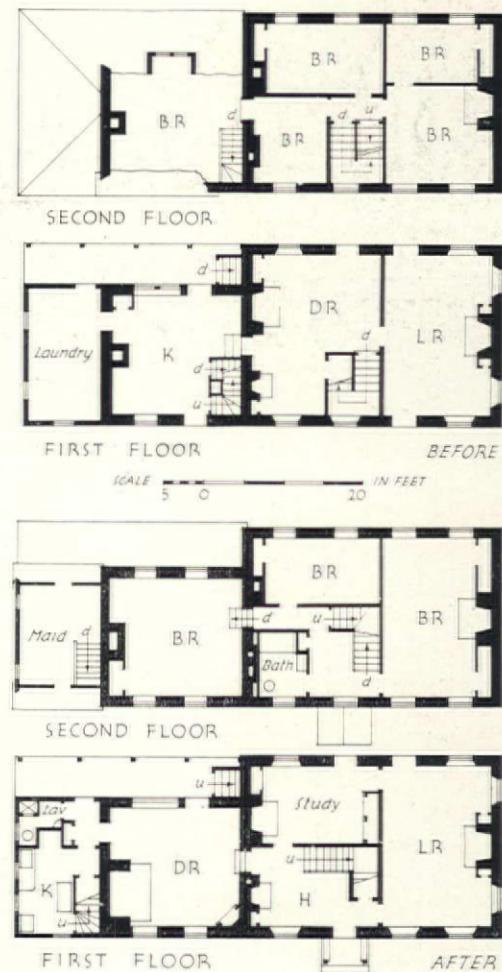


Lee Coyne

#### HOUSE OF JOHN R. CLARK, LAHASKA, PA.

ALFRED N. BOELL, ARCHITECT

An interesting feature of the house is that the new plan of the first floor is more like the early houses of this type than it was before the alteration. Apparently some former occupant had delusions of grandeur about eating in the kitchen and produced the makeshift dining room and hall. The two fireplaces bear out this idea. The maid's bathroom is well located on the first floor. This is often a better position than tucked away under a sloping roof with consequent inadequate head room. Note further the improvement in the living room obtained by changing the center entrance to two side ones. Although the wall space is actually less, more of it is useful. The same principle is shown on the second floor where the smaller bedroom has gained by having the door moved from one end of the room to the other.





Photos, Courtesy, Pittsburgh Plate



#### GOLD'S AND NUNN'S MARKETS

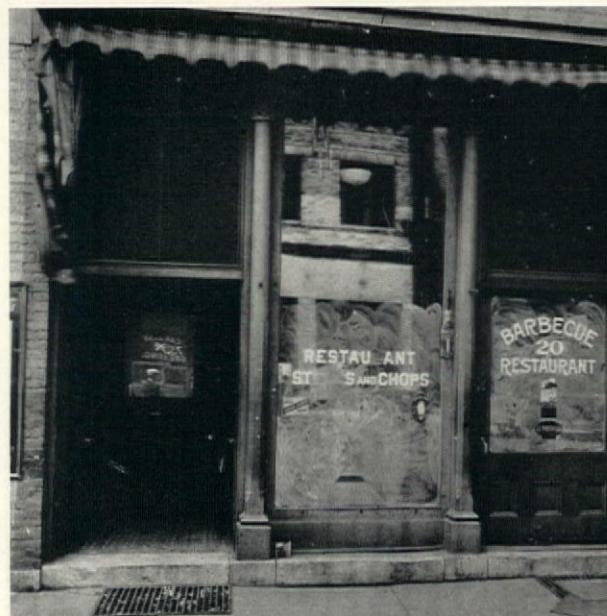
CLEVELAND, OHIO

E. W. TRUTHAN, ARCHITECT

LET modernization skeptics note that "Gold's Fruit Store increased their business by 25 per cent due to increased number of customers. Nunn's Meat Market gained 150 new patrons and estimate their increased income as 25 per cent." Both establishments had been at the same stand for three years prior to the alteration. Total cost, including new show window glass, \$869

THE restaurant below in its original state was about as unappetizing a hash house as one generally sees. The owner stopped the dwindling receipts by altering. The total cost was \$1,100 of which \$400 was for interior work.

#### ALVIN FAY RESTAURANT,





notable improvement. The composition is good. So is the contrast between the plain surface of the black glass and the sand etched ornament of the octagonal rosette, the window ansoms, and the entrance door

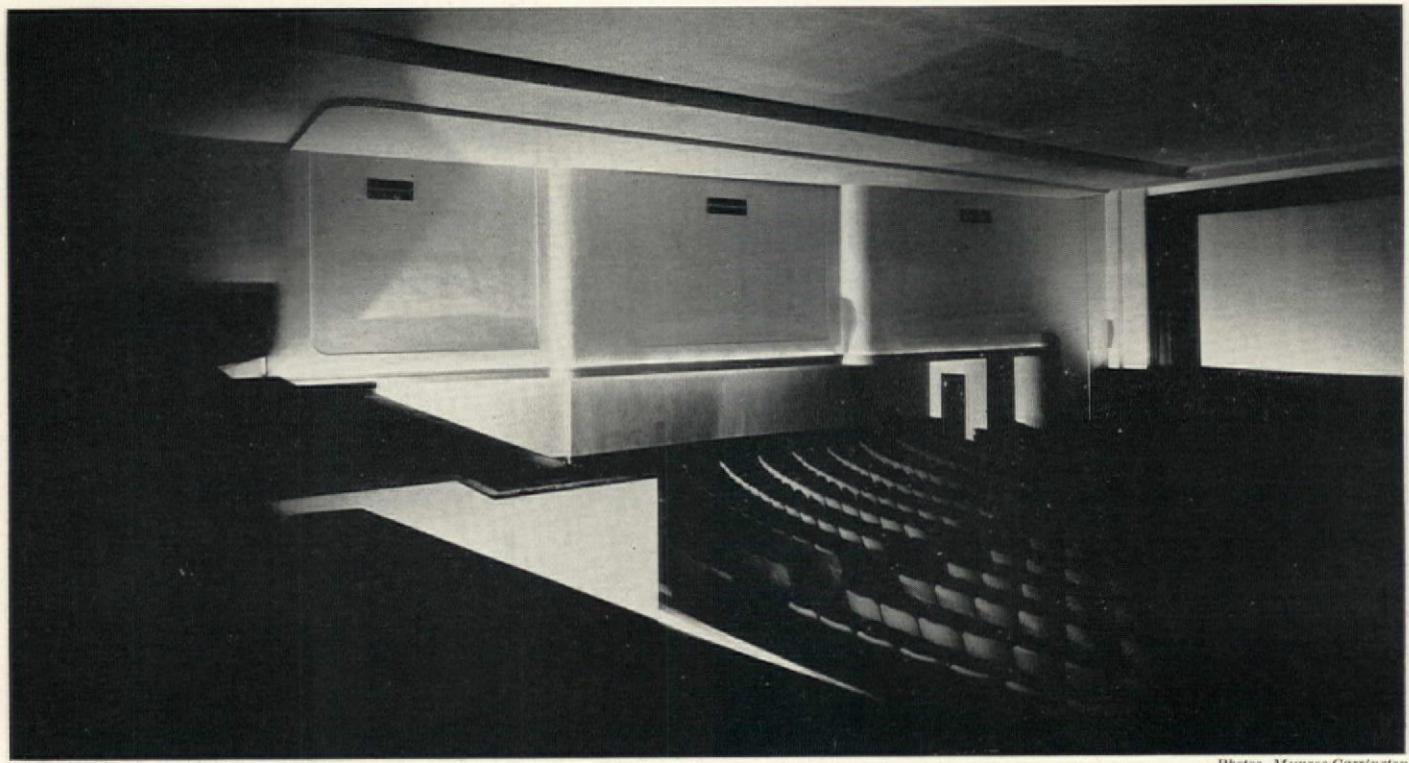
#### LAFAYETTE, INDIANA



105-109 DAUPHIN ST., MOBILE, ALA.

GEORGE B. ROGERS, ARCHITECT

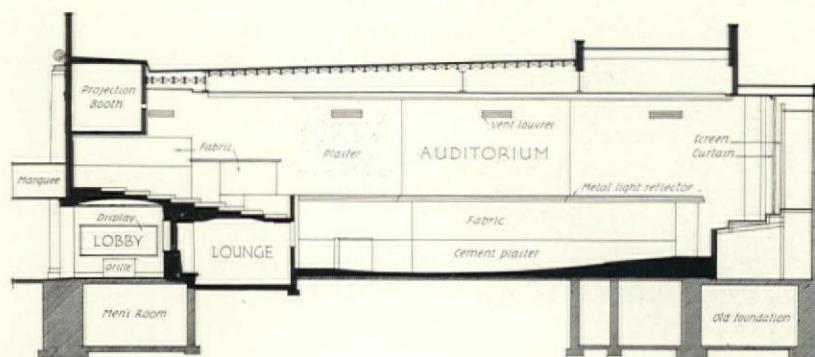
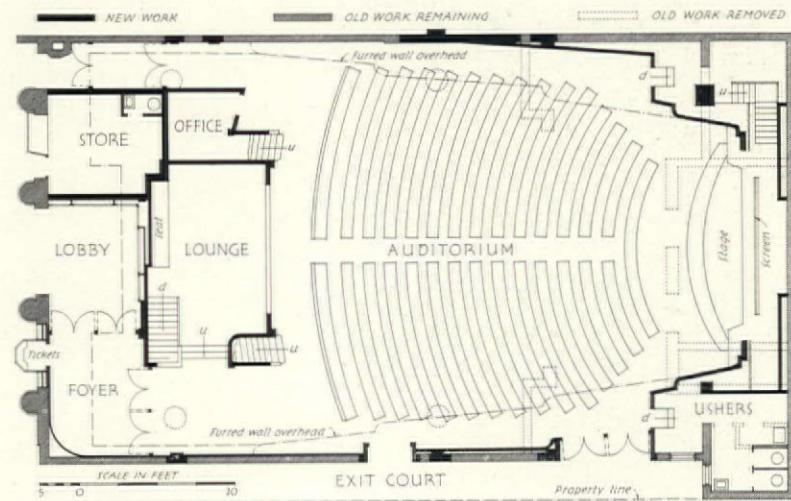
MOBILE's building inspector decided that 110 years was long enough for a building to live so about two years ago he condemned the old stores above. The lessees liked the location so well that they required the architect to alter the building without interrupting the business. The third story was entirely removed and much structural work done to make the buildings safe. The Vermont Verde Antique marble and soft buff-gray brick of the exterior have so improved the looks of the neighborhood that there has been a considerable real estate boom in surrounding properties

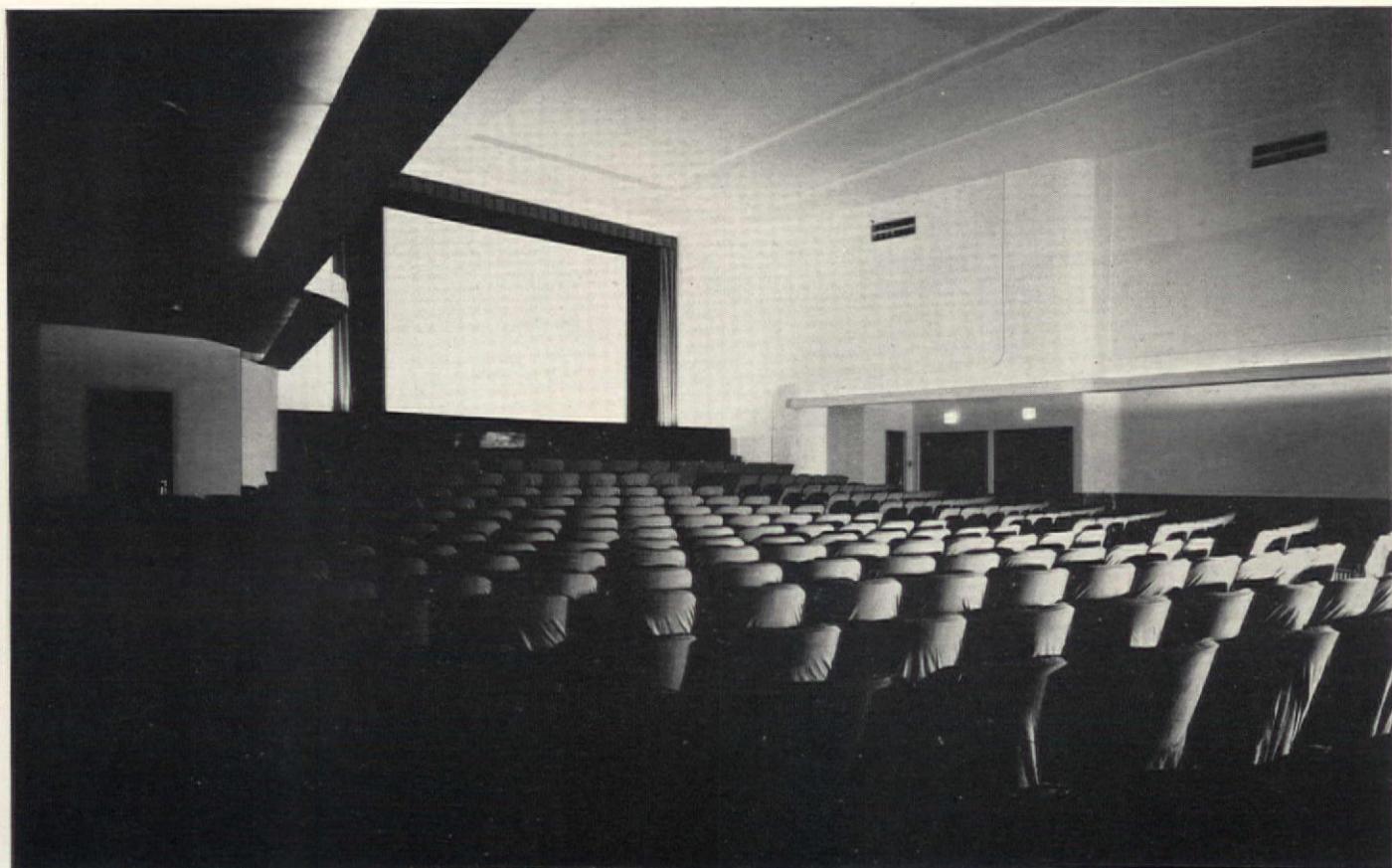


Photos, Munroe Carrington

## SUTTON THEATER, NEW YORK, N. Y.

BEN SCHLANGER, ARCHITECT, WILLIAM A. HOFFBERG, ENGINEER





FIRST a theater, then a bank and now one of New York's most modern movies. Many will recall it at an earlier period as the Bandbox where Margaret Mower's peach satin panties and early shotgun dramas started the august Theatre Guild on its road to fame.

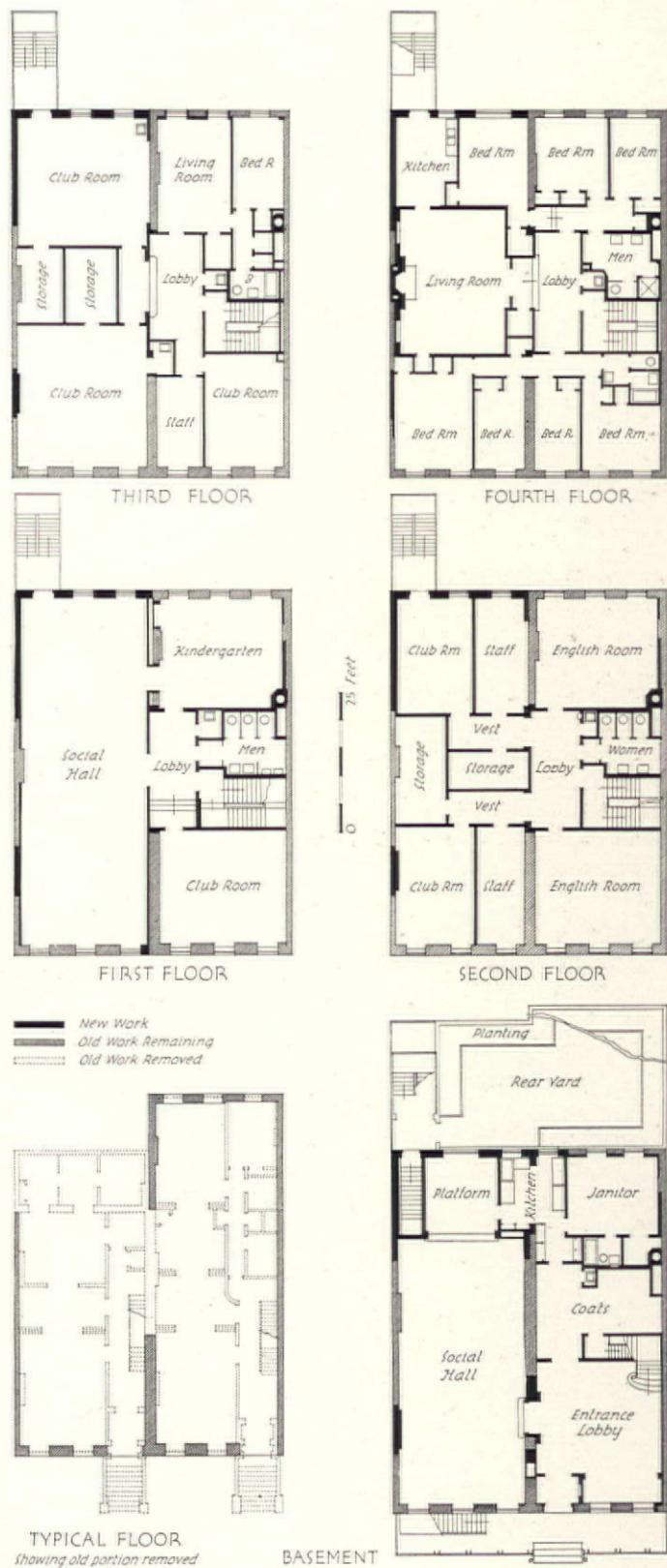
The latest alteration makes use of architect Schlanger's rising parabolic floor principle to adjust sight angles so that balcony and orchestra spectators see equally well. The scheme of decoration is of white with rose upholstery. Unobtrusive, yet so designed as to focus attention on the screen, colored lights tint the unfinished plaster walls between performances.



BROWNSTONE front usually means but one thing, and that unpleasant, to a New Yorker. Here is one that is anything but unpleasant. Removal of several tons of unnecessary architecture disclosed good fenestration and space composition. The architect has added a string course and a rusticated basement to relieve monotony and has let the rest speak for itself

STUYVESANT NEIGHBORHOOD HOUSE, NEW YORK, N. Y.

EDWARD I. SHIRE, ARCHITECT, S. BRIAN BAYLINSON, ASSOCIATED



THE most drastic changes in plan were the elimination of the entire stair and stair hall in one of the buildings and the addition of a small extension to the rear of one building to yield more space for the Social Hall. The rest was the addition of proper sanitary facilities and redecoration throughout

#### DETAIL OF MAIN STAIRS

THE directors of the Stuyvesant Neighborhood House evidently believe that they are aided in their social work by attractive surroundings. The architect was therefore fortunate enough to be able to create such attractive details as this stair. The horizontally divided wainscot following the slope of the stair is unusual. It is not only successful in appearance, but it lightens the cleaning burden



#### LIVING ROOM

THE same policy of providing attractive surroundings has been followed in the living room of the Resident Worker. With all the emphasis placed on beauty of detail the total cost of this entire alteration was only \$39,000



*Van Andra*

## AN EXPERIENCE IN UNORTHODOXY

With himself for a client, an architect starts with a week-end cottage and ends 6 years later with a 22-room country house, in which steel framing, prefabricated units and aluminum foil play a part

PROBABLY architect Lawrence Moore's own house in Wilton, Conn., will never be famous as a house which bridged the revolution in building materials. Yet in a sense it deserves to be. Initiated in 1927 when prefabrication, if it meant anything at all, signified something untruthful, and when steel frame construction was reserved exclusively for skyscrapers, the house was finished last year with the aid of such comparative novelties as steel columns, precast concrete beams and aluminum foil insulation.

But not for its construction alone is the house worthy of description, for in the evolution of its plan there was something akin to the ancient practice of putting the cart before the horse. The house itself was the last unit built, having been preceded by a guest cottage, then a garage, and another guest cottage. It was not, of course, accomplished so haphazardly as it sounds. Before embarking on

actual construction the possibilities of future development were considered and a comprehensive scheme developed. The parti took advantage of exposure and outlook on the wooded hill, and the ultimate product, in spite of somewhat spasmodic growth, is surprisingly like the preliminary scheme.

The architect juked his first plan (of building first one wing of a future large house) as being too complicated. It was decided instead to start off with the guest house, which was at first to be guestless and used as a week-end house by the family. Therefore the best site was allocated to the ultimate dream, and the cottage was started in a slightly lower position. Nineteen Twenty-seven saw the week-end cottage completed, three small bedrooms, two baths, a living room and the kitchen.

By 1929 the original preliminary sketches were pushed far enough to include a garage wing which would be a



Van Anda Photos



*Three acts in the metamorphosis of Lawrence Moore's house: Above, 1933, the completed building looking across the brick terrace at the converted week-end house with the steel-framed new unit at the left and the garage wing trailing off to the right; left, 1931, the week-end house and separate guest house; below left, 1927, the original acorn, the week-end house*

part of the real house. And in accordance with 1929 standards a brick three-car garage was built with a couple of servants' rooms over. Two years later, as the ultimate house began disappearing into the future, the need for an extra bedroom led to building another entirely independent guest house, attached by an archway to the first guest house, and containing one room and bath.

Thus matters stood until 1933 conditions forced the owner-architect to take up permanent residence in the country. This brought about the metamorphosis from a week-end lodge to an architect's "subsistence homestead." The idea of a separate guest house became economically unsound. The location was too close to permit sale or rental, but its site was not good enough to warrant enlarging it as it was. Moving the original guest house was a reasonable matter. So plans were made to incorporate garage, guest house and all into the approximate lines of the earliest sketches. The guest house was attached to the garage by an archway. Its living room became the dining room and its kitchen was somewhat enlarged. A new addition was planned to be the central motif of the plan, with a new living room, study, and three bedrooms.

The original ideas provided for a brick exterior, and as the guest house was clapboarded and painted white, it was decided to paint the brick of the garage and of the new portion. The one-room guest house was moved to the extreme south end and connected to the house by a porch.

New materials were investigated, and the final decision was to use Stran-Steel framing for the new portion,

with brick veneer. The advantages of a steel frame lie in the elimination of shrinkage, and the reduction of the fire hazard. It was put up entirely with unskilled labor and an occasional carpenter, under the supervision of a manufacturer's representative. To the steel frame was nailed a galvanized reenforcing fabric, covered on the back with aluminum foil insulation. This was used on both inside and outside of exterior walls, the aluminum foil lining the air space between studs. On the exterior the fabric received a coat of stucco, which was then covered with liquid waterproofing. Outside of this was laid 4 in. brick veneer, tied with anchors nailed to the steel.

The first floor of the new portion was of precast concrete beams with light cinder concrete slab blocks, each approximately 2 ft. square. It provides fireproof construction at very low cost. The beams and blocks were laid in place, directly from the truck in which they were delivered. They received a 1 in. finish coat of cement, on which was laid a linoleum finish floor. As the house is located on a ledge of rock, there is only a foot or two of air space below. This construction proved cheaper than a slab laid directly on the ground, and eliminates moisture and cold.

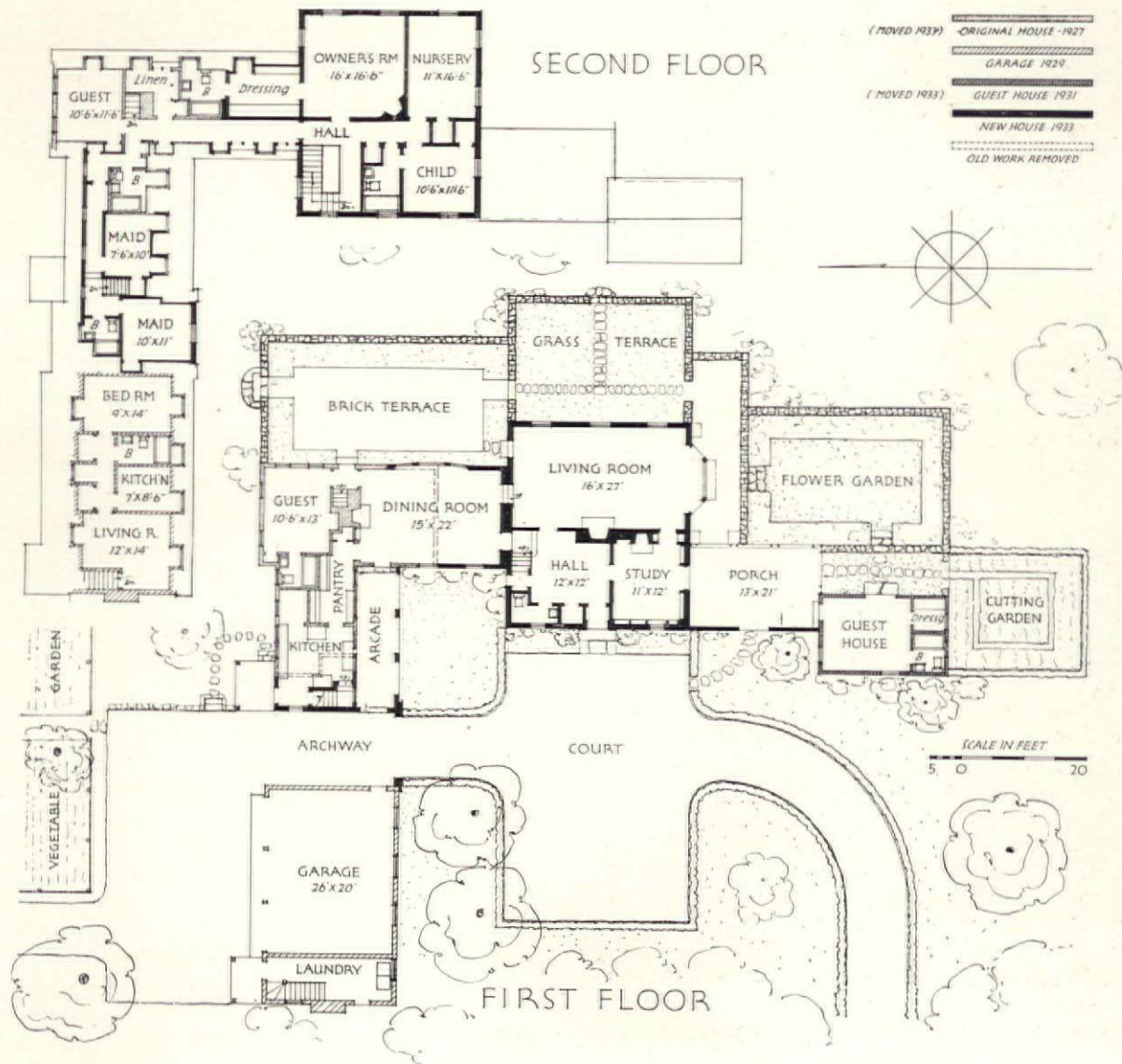
The second and attic floors have light slabs over the Stran-Steel joists, with linoleum and asphalt tile finish for the second floor. The attic has a cement floor, some-

thing of a novelty for a small house. As the garage already had a dark gray slate roof, similar slate was used throughout. Slates were laid by a new method which permits a great saving of material. The slates are held in place by small copper wire clips, and each course is interlined with heavy felt, replacing the usual head lap. The roof of the new wing is on N. C. Pine sheathing, nailed to Stran-Steel rafters.

The second floor of the kitchen wing was enlarged to include two maids' rooms and a bath, one of them being over the archway. This whole portion was insulated with rock wool, 4 in. thick, which proved very efficacious. Aluminum foil proved extremely effective in insulating radiator enclosures. Where it was used in the brick and steel construction, it seems efficient, but a certain amount of cold may be felt at each stud as it comes directly through the steel. The steel also conducts more sound than wood frame construction, but this probably could be reduced by furring one side of all partitions with wood. The steel and light slab floor construction, however, transmits almost no noise.

The house is heated by a vapor system with a tubular boiler and oil burner. In spite of being spread out, the heating system has proved economical to operate.

Notwithstanding its haphazard growth, the final prod-





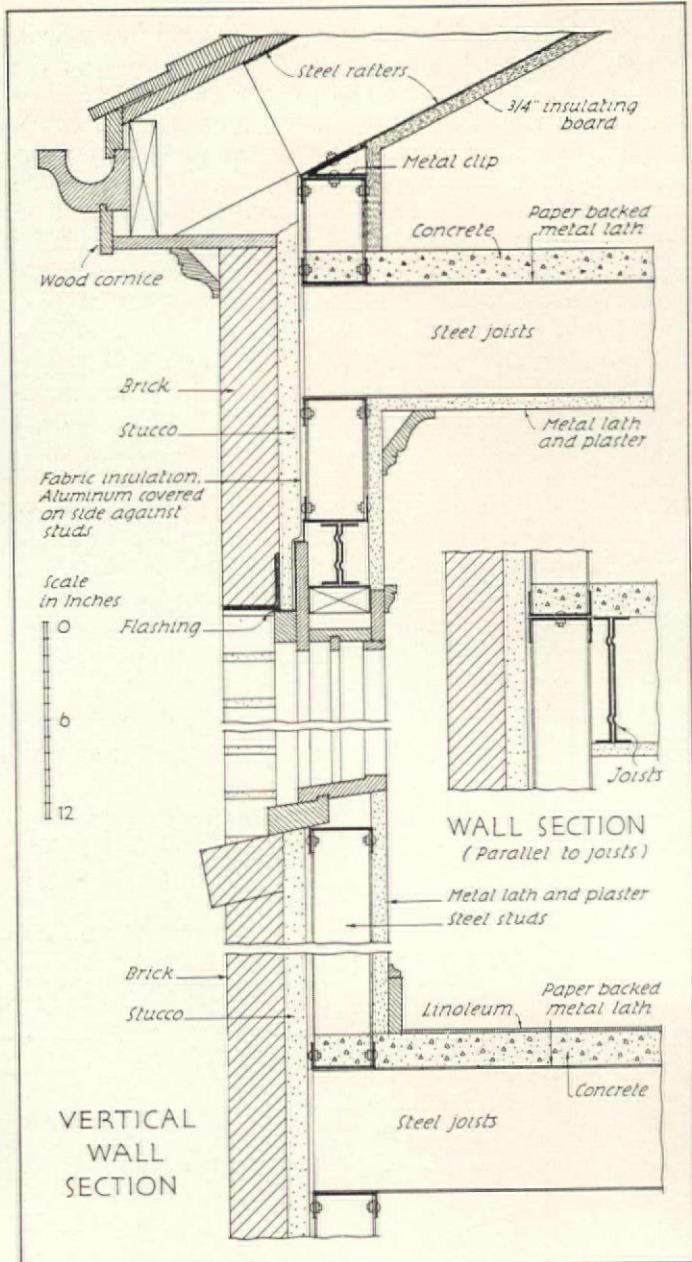
*Galvanized reinforcing fabric, which is lined with aluminum foil, partially erected*



*Light steel frame for walls and roof completed for the major unit of the residence*



*Steel work under way without benefit of high-priced, city-imported steel erectors*



*Non-shrinking and thoroughly fire resistant is the construction of the major unit of the house, shown in wall section above, and under construction at the left. Cost of the steel-framed unit was about 33 cents a cubic foot; the same house built of ordinary wood frame construction would have cost about 30 cents a cubic foot*

uct has achieved a somewhat logical plan. The southern exposure of the main house provides a children's wing, which can be shut off by itself. The owners' room faces the east and the view. It has a dressing room and bath built in what was the old house. Two of the bedrooms of the old house are ordinarily shut up in winter, but may be heated when desired. The porch connecting it with the house was enclosed on the west, so that it is protected in cold weather and makes a sun-trap of the adjacent garden. Large glass doors in the enclosing wall may be opened in the summer to encourage the cooling breezes. While cost of the house was excessive, \$25,000 complete, architect Moore believes his increased knowledge of new construction methods more than cancels the additional cost.

# ENGLAND



SIR JOHN BURNET, TAIT AND LORNE, ARCHITECTS  
ROYAL MASONIC HOSPITAL LONDON

JOSEPH EMBERTON, ARCHITECT  
ROYAL CORINTHIAN YACHT CLUB, BURNHAM ON CROUCH, ESSEX

G. CHECKLEY, ARCHITECT  
THURSO HOUSE, CAMBRIDGE

SIR E. OWEN WILLIAMS, ENGINEER  
FACTORY BUILDING FOR MESSRS. BOOTS, NOTTINGHAM

RAYMOND McGRATH, ARCHITECT  
FISCHER'S RESTAURANT, LONDON  
AIRPLANE INTERIOR, IMPERIAL AIRWAYS, LTD.

THE ARCHITECTURAL FORUM INTERNATIONAL SECTION



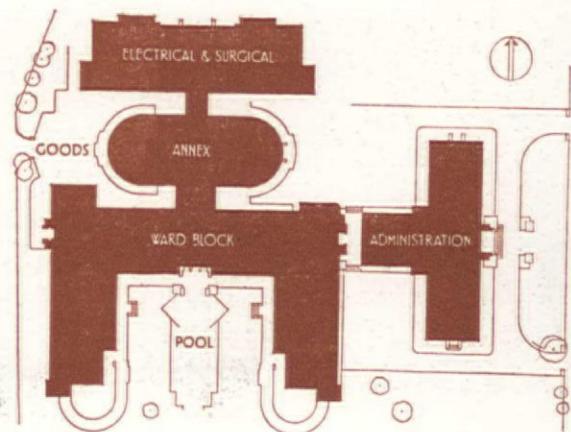
THE ARCHITECTURAL FORUM

# ROYAL MASONIC HOSPITAL LONDON



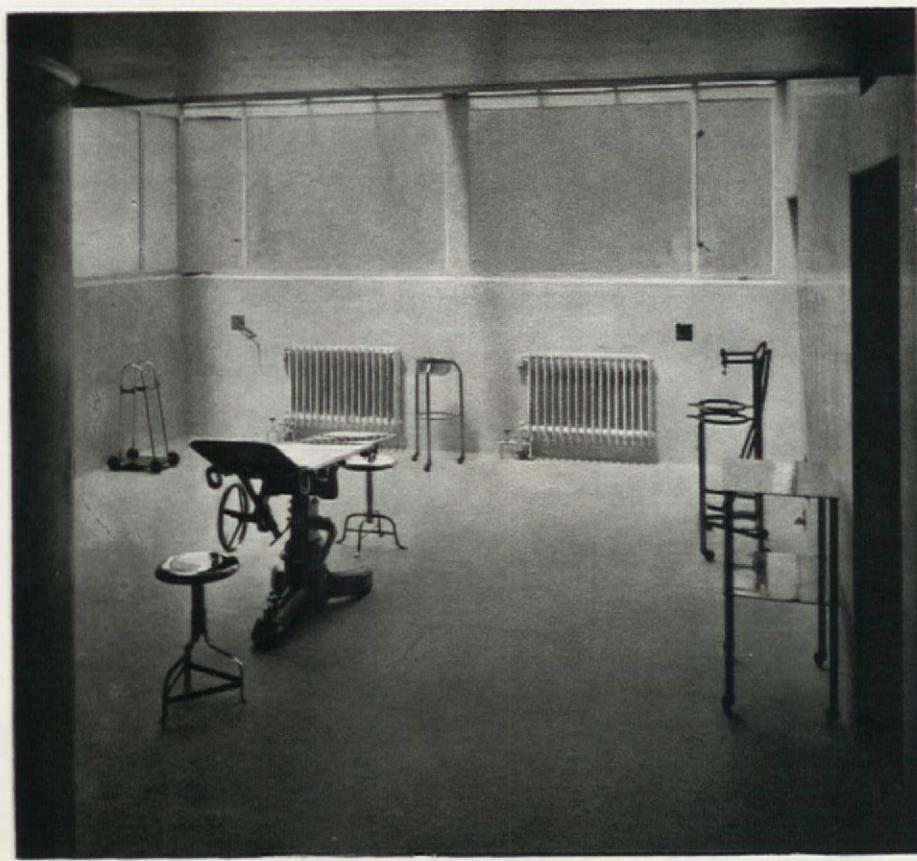
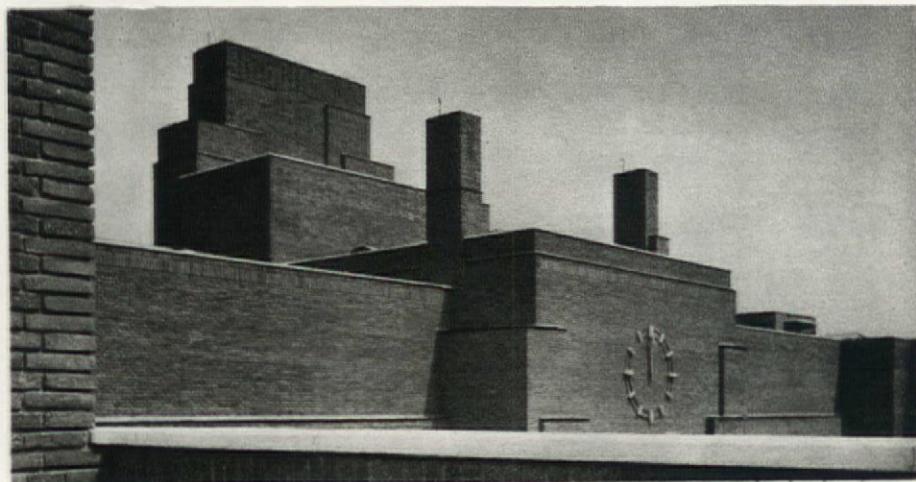
**SIR JOHN BURNET, TAIT AND LORNE, ARCHITECTS**

Open air and sunlight are the first requisites of recuperation. The Royal Masonic Hospital of London has stressed these essentials in its plan. On two sides it embraces the wide, cleanly acres of Ravenscourt Park. Windows instead of dingy walls enclose its stair wells, while sunlit balconies project over a typically British greensward. Through cantilever construction, these balconies overhang twelve feet three inches and thrust forward unobstructed by heavy pier or column. Arc process welders used coated electrodes on the steel supporting members, since the bare wire weld has been found to place too great responsibility on the skill of the worker.





17 STU  
76



One of the few really modern hospitals in the world today, the design is a complete departure from traditional forms. As befits a Masonic Hospital, perfection of brickwork characterizes the facade. A feeling for the richness of the material has led to a happy combination of telling relief with vibrant plain surfaces. The sculptured figures are by Gilbert Bayes. Obtaining beauty from a boiler stack has been a peculiar talent of architects Sir John Burnet, Tait and Lorne. Conditioned by their use of brick, their arrangement of roof space attains cubistic vigor. The architects have co-operated with the medical faculty to produce a complex structure of ward blocks, restaurants, kitchens, and operating rooms, in which every process of a great health plant has found its place in the design and been appropriately simplified. They have also co-operated with the faculty in much of the design of the technical accessories. Special attention has been given to the construction of the operating theatres, which for economy of use are arranged in two pairs.



THE ROYAL  
CORINTHIAN  
YACHT CLUB  
BURNHAM  
ON CROUCH

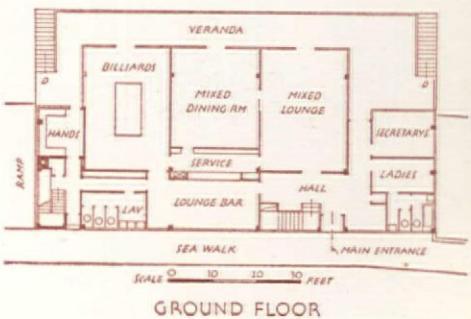
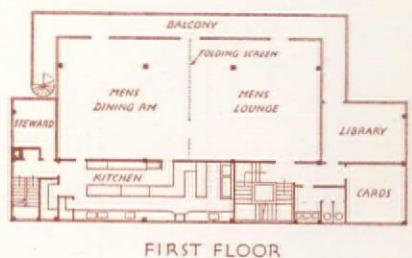
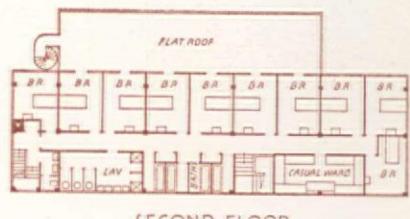
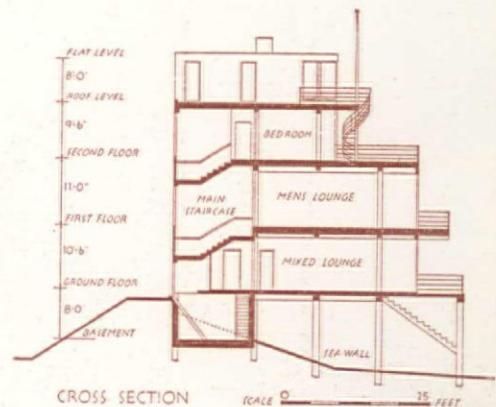
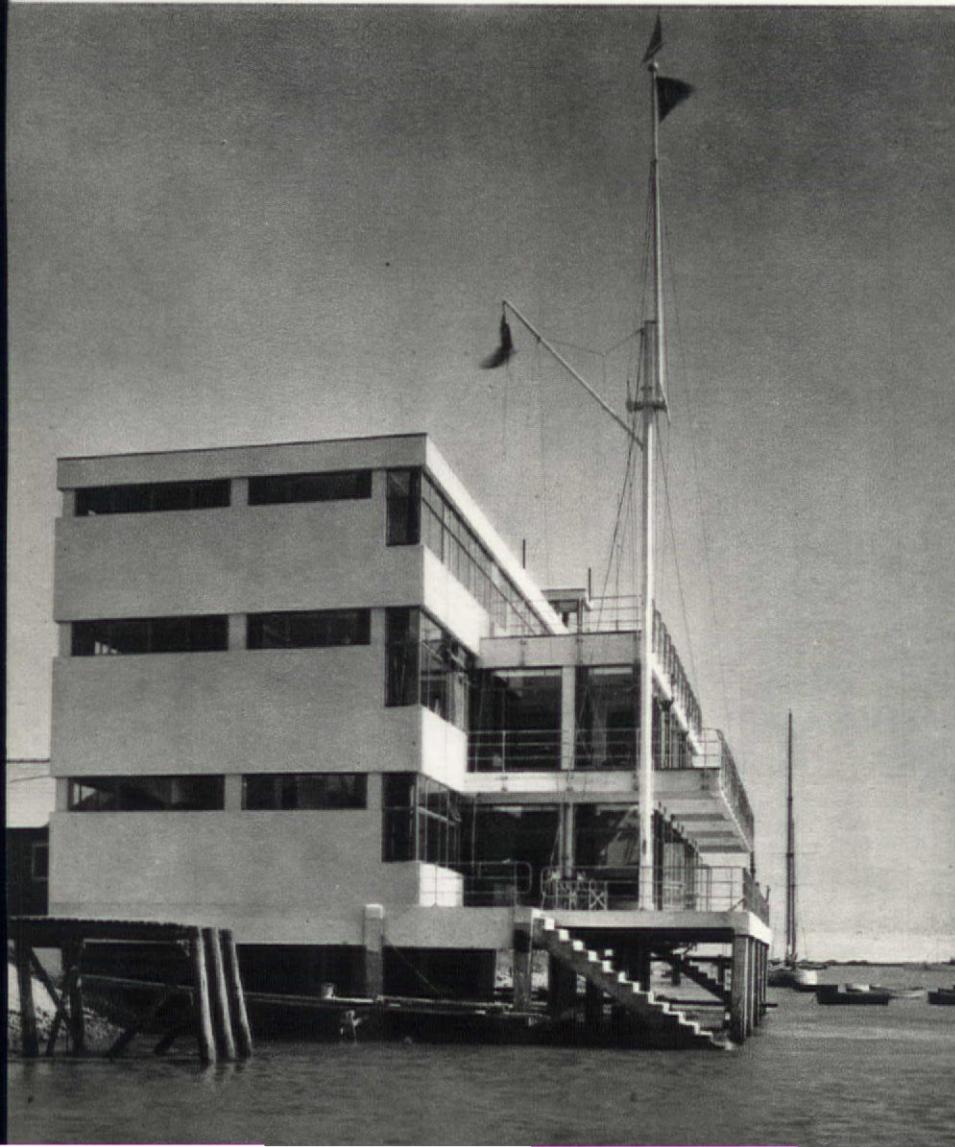
JOSEPH EMBERTON, ARCHITECT

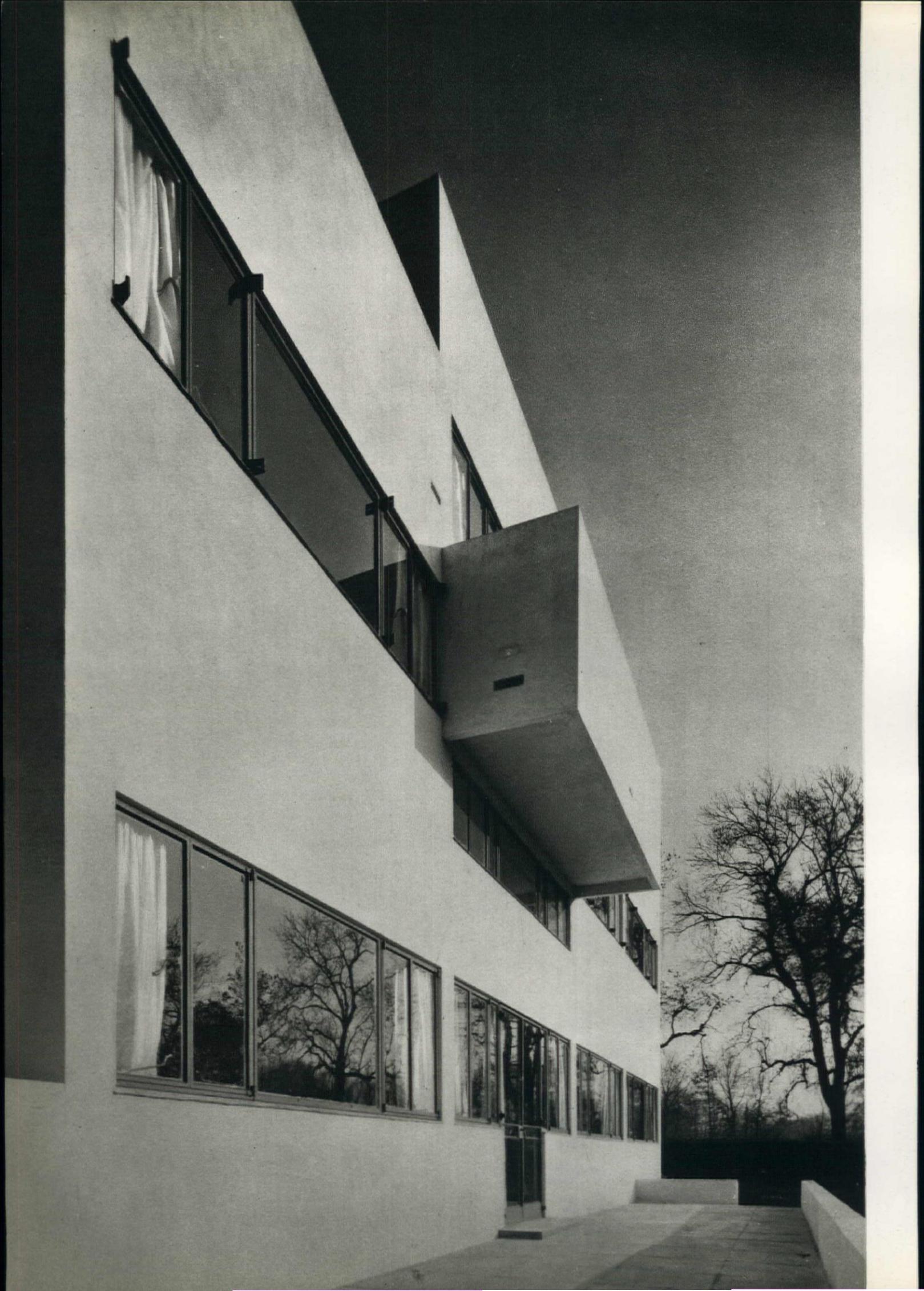
In England sport has attained its apotheosis. British buildings for sportsmen and the sporting event grow out of direct creative processes of architecture, responding to new necessities and turning form to new uses. Every sailor is aware that each stay, sheet, halyard, sail, and spar of a ship must be conditioned by rigid requirements derived from absolute necessity and years of experience. The architect, therefore, of a yacht club for corinthian skippers has essayed to produce the same inevitable reduction to fundamental terms, secure in the knowledge that all the members firmly believe that no good boat was ever an ugly one. Concrete and steel replace canvas and hemp, but the principle is maintained throughout. The sport of small boat sailing



THE ROYAL CORINTHIAN YACHT CLUB, BURNHAM ON CROUCH, ESSEX, FROM THE WATER

demands of the architect that he shall produce a structure which is part ship, part grandstand, and part dormitory. Each must have its place yet may not interfere with the others. Joseph Emberton has recognized this demand and deliberately emphasized the variety of function and intention. He has not weakened his work by disguises nor fallen into the meretricious trick of creating atmosphere by imitative details. Here the different departments are as frankly located and as clearly expressed as are those of the six meter boat. Bedrooms are reduced to their absolute minimum for sleeping only. Balconies and roofs provide space from which spectators can really see the races.



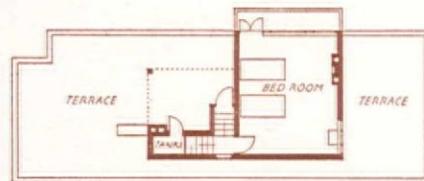


# THURSO HOUSE CAMBRIDGE

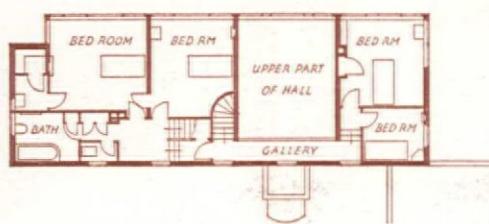


G. CHECKLEY, ARCHITECT

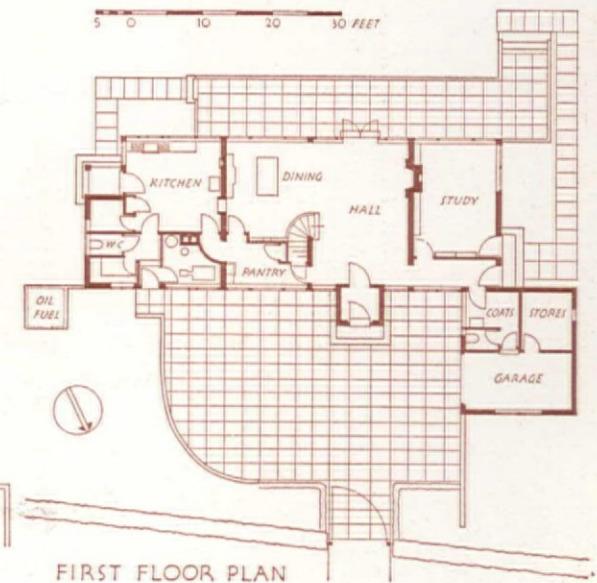
Quite in revolt against the traditional turreted castle, England's modern burgher accepts the continental doctrine that health and comfort can no longer be served by the cramped or by the dreary in home building. Having gone into the suburbs for sunlight and peace, he demands a house which shall exclude neither. It must have windows giving on to balconies, and flat roof spaces that may be used for rest or recreation purposes. It must have conveniences that are conveniently accessible. Yet being English he also demands that certain traditions of British planning shall be preserved. One of these is the great hall which is the centre of the home life. Hence in this house though dining room and hall are combined in one space that portion which is the hall proper is carried through the second floor and given a gallery. The south exterior with its terrace is shown on the opposite page. Above is shown the spacious great hall with its spiral stair.



ROOF PLAN

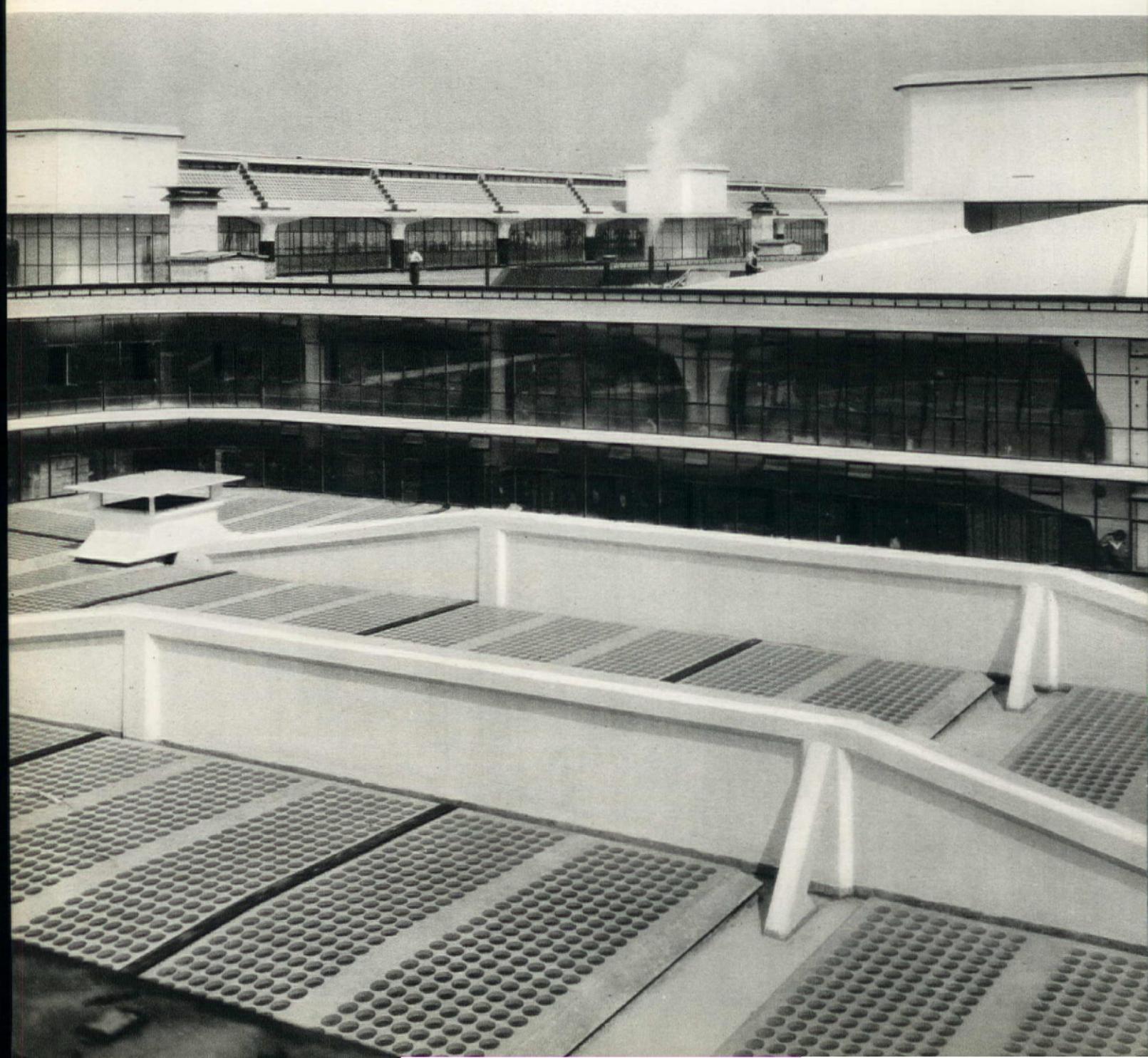


SECOND FLOOR PLAN



FIRST FLOOR PLAN

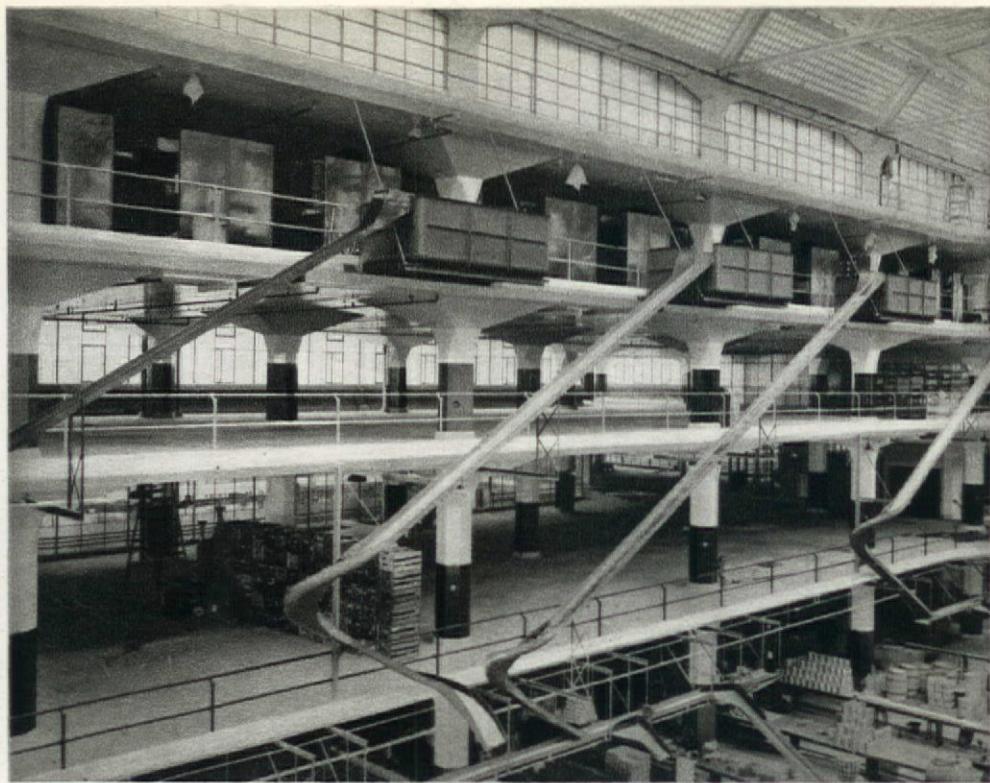
# FACTORY BUILDING FOR MESSRS. BOOTS, NOTTINGHAM



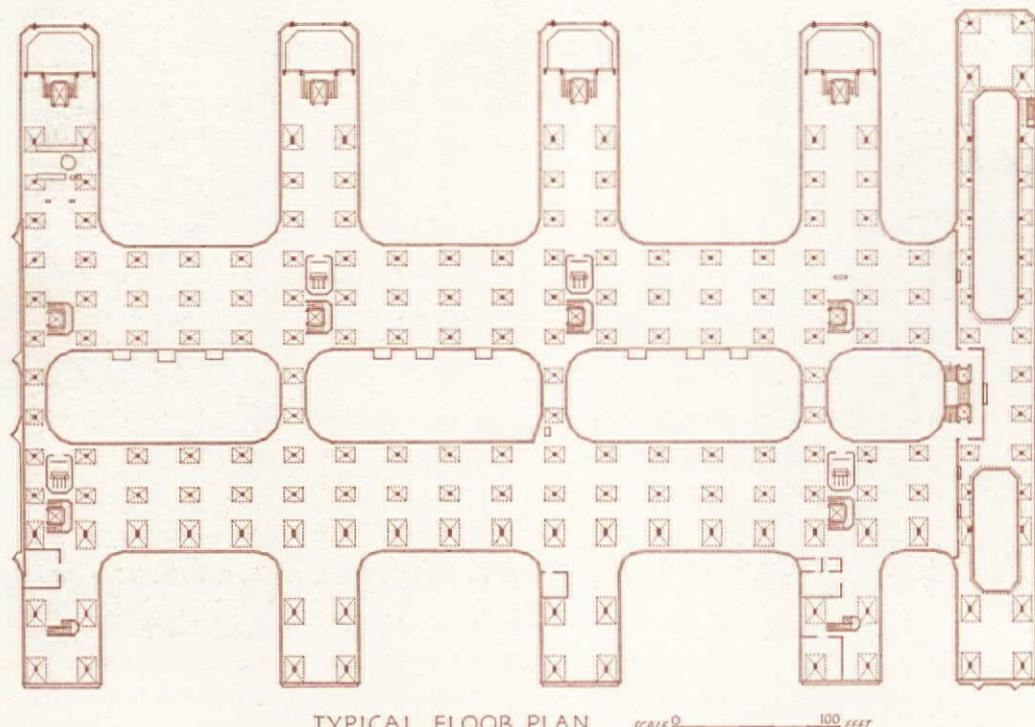


#### SIR E. OWEN WILLIAMS, ENGINEER

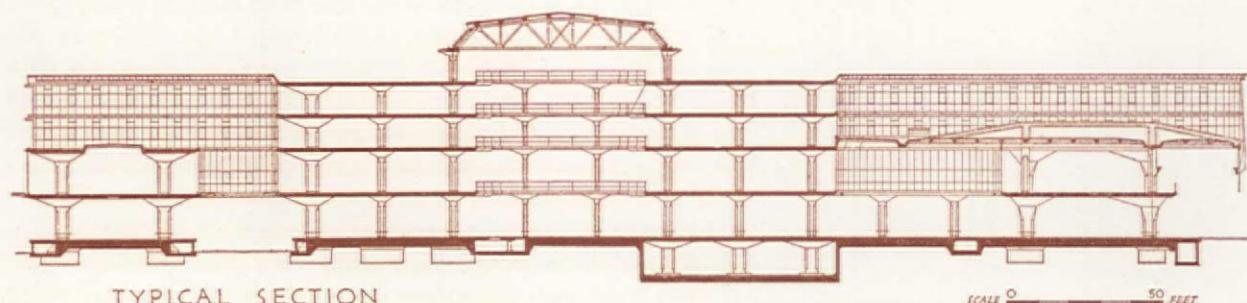
Entire walls have dropped away in the new factory architecture, leaving nothing but the floors. These are shielded from the weather by transparent glass which bears no structural burden. The absence of all but the thinnest of dividing bars permits the greatest amount of light which has been proven to have a pound, shilling, and pence value in manufacturing processes. Pristine cleanliness is now made possible where floors are bathed in sunshine and where courtyards, once closed with opaque walls, have been opened, roofed with glass, and made an integral and airy portion of the interior. Roofs have been built of glass before, but the setting of glass in concrete marks an advance from the steel frame that must be painted and can, therefore, be maintained only at considerable expense. Design of this sort can be achieved only from a rigidly geometric basis. This must commence, as it does here, with the plan. A module of column spacing repeated without variation sets the fundamental rhythm of the entire building. Only at the end bays, where special requirements demand, is this module departed from. The same geometric precision is found again in the transition from the column to the floor slab where the direction and dimensions of the planes reflect the character of the stresses.



GLAZED ROOFED COURT OF MESSRS. BOOTS' FACTORY



TYPICAL FLOOR PLAN      SCALE 0 — 100 FEET



TYPICAL SECTION      SCALE 0 — 50 FEET



## FISCHER'S RESTAURANT, LONDON

**RAYMOND McGRATH, ARCHITECT**

With typical British common sense, the proprietors of Fischer's restaurant have installed a small cocktail bar at the street level, a fitting introduction to the smart dining room below. The architect has succeeded in creating an atmosphere, quite remote from that of the usual street level bar. This is a place for rendezvous where minutes spent in waiting an unpunctual dinner partner are no chore. Tango red front and metal lettering, contrasted with pale green glass and a double sided show window attract the thirsty. The vestibule allows direct access to either the bar or to the restaurant in the basement. In contrast to the heavy and over ornamented design too often found in public eating places, the architect has here created an airy

17  
NEW  
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ESCHERS RESTAURANT

TO THE

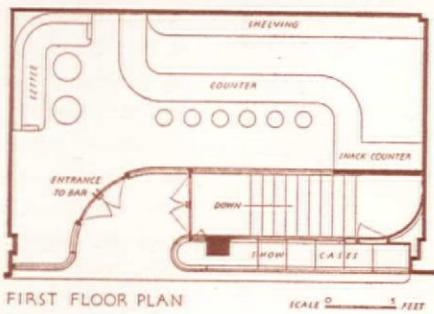
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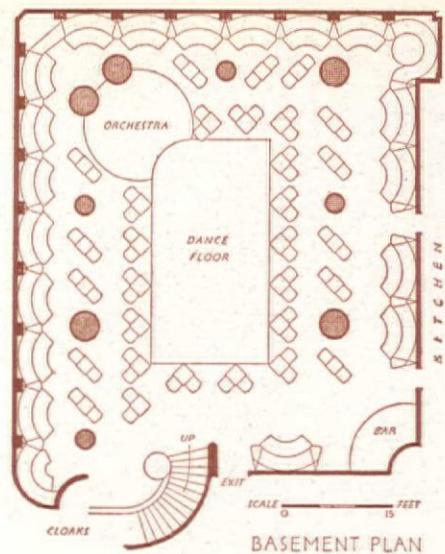




PLAN OF BAR AND THE RESTAURANT ENTRANCE

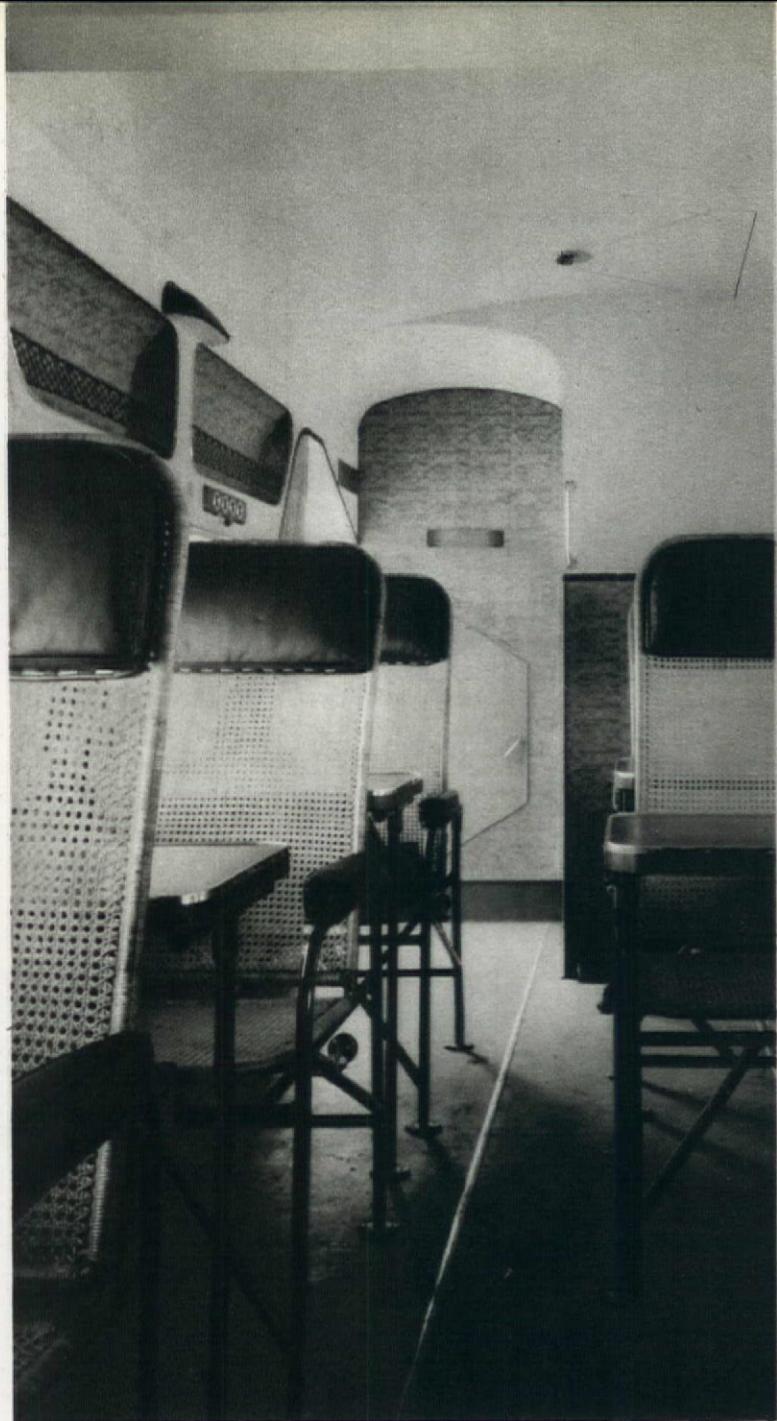


FIRST FLOOR PLAN



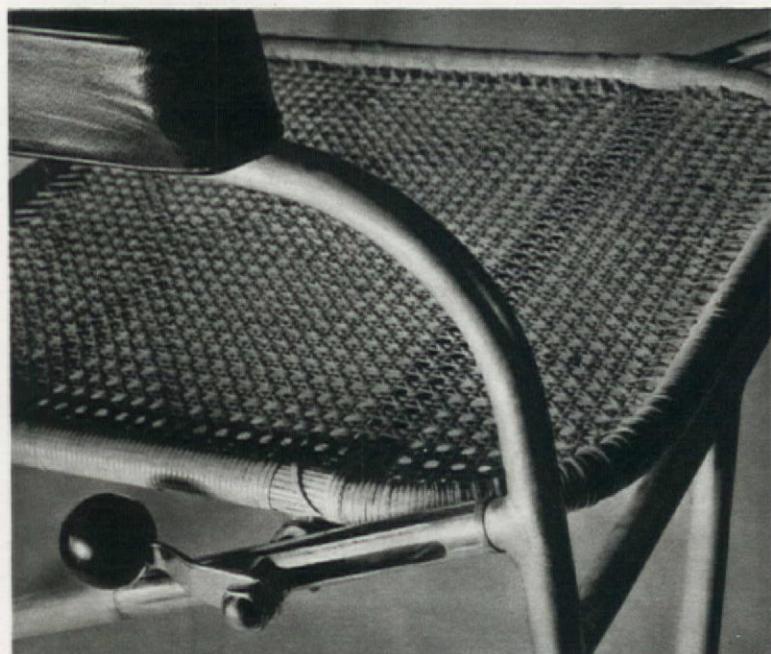
simple background for the gentle art of dining out. General lighting is from "sunlight" nitrogen tubes which give a golden peach colour. On the ceiling wriggles a fantastic, fiery serpent of bent glass tubing worthy of a New York speakeasy. Supplementary lighting is furnished from a continuous light cornice and lemon green light trays on the columns. The furniture as well as the upholstery was specially designed by the architect to be a fitting adjunct to such a room. The green striped grey fabric emphasizes the prevailing mood of cool sophisticated restfulness.





## AIRPLANE INTERIOR

The passing of the academic subdivision of the arts has permitted the architect to bring his wider aesthetic perception to fields hitherto occupied solely by the stylist and industrial designer. Seat space for nine passengers in a 15 x 6½ foot airplane cabin and a weight restriction of 252 lbs. for all passenger equipment, required architect Raymond McGrath to reduce large scale planning technique to terms of inches



## IMPERIAL AIRWAYS

and ounces. With no sacrifice in design, chairs with a special locking device weigh only 7 lb. 3 oz. These overcame the weight obstacle. Cane seats attached directly to German "Elektron" tubing with hair-lock covered, sponge rubber arm and head rests, pared down the weight to the minimum. All lavatory and canteen fittings went through the same reducing process and emerged weighing but 25 pounds total.



All photos, Columbia Commercial

## PARK IT AND MARKET

... might be the slogan of Portland's RFC-financed Public Market providing free parking for 650 cars, tiled stalls for 298 farmer-foodsellers, a hundred food shops, its own weight and quality inspectors, and a "Handy Ann" to tote customers' parcels

WHEN Portland, Oregon, grew twenty blocks in size by the filling in of the west waterfront along the Willamette River, enterprising citizens sought ways to use them. For the site between the Hawthorne and Morrison bridges, a few blocks from the business and commercial center of the city, a public market seemed logical, was often talked of by the city fathers.

But projects do not start themselves. This one, like all others, needed organization and financing. Finally in 1929, when many another building plan was formulated, a scheme for the mammoth market was evolved by a private corporation, The Public Market Co., of Portland, with C. Lee Wilson its president. Architects,\* engineers and market consultant were soon at work on plans and specifications. With the City Commission an arrangement was made involving the purchase of the completed and occupied structure through the sale of about \$1,200,000 in Utility Certificates. Actual construction therefore was to be financed by private capital. If the bull market had con-

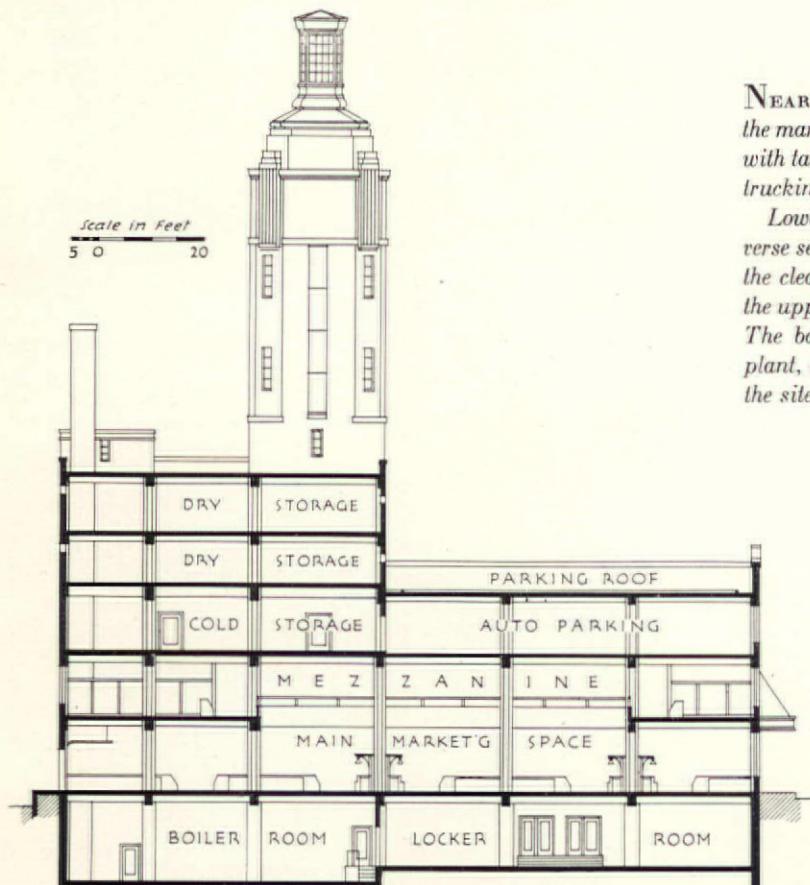
tinued Portland would have had its food market at least two years sooner. With plans drawn and policies determined all was at a standstill after the October crash until the RFC was called to the rescue. Satisfied that the market would prove to be self-liquidating, the RFC advanced the Public Market Co. \$775,000 in the spring of 1933. A. H. T. Williams of Portland was appointed RFC engineer.

Work began May 1, 1933, with two shifts working five hours each, five days a week. On December 15 Portland celebrated the grand opening of "the largest and most modern Public Market Building on the American continent!"

Large markets are either one of two types: (1) the competitive type in which space is leased by the owners to private or individual merchants on either a flat rental or on a profit-sharing basis; (2) the supermarket type, in which the owner or a single lessee operates all the merchandising departments.

The Portland Market is operated on the competitive basis, though it does operate one concession of its own, "The Sugar Mill." The services provided by the market include free parking of customers' automobiles; heat,

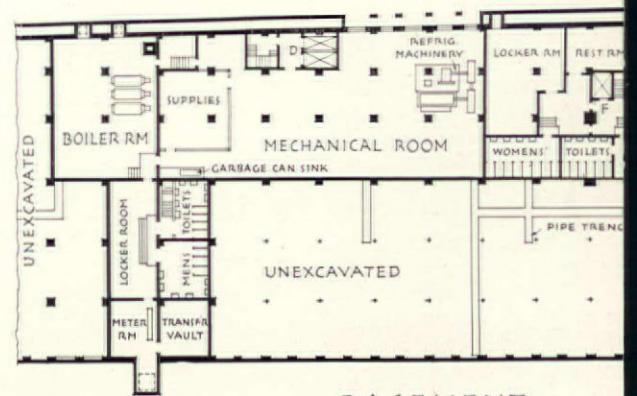
\*The architects were Lawrence, Holford and Allyn; structural engineer, Howard Rigler; supervising architect, Sydney B. Hayslip; market consultant, Arthur Goodwin. The general contractor was Ross B. Hammond, Inc.



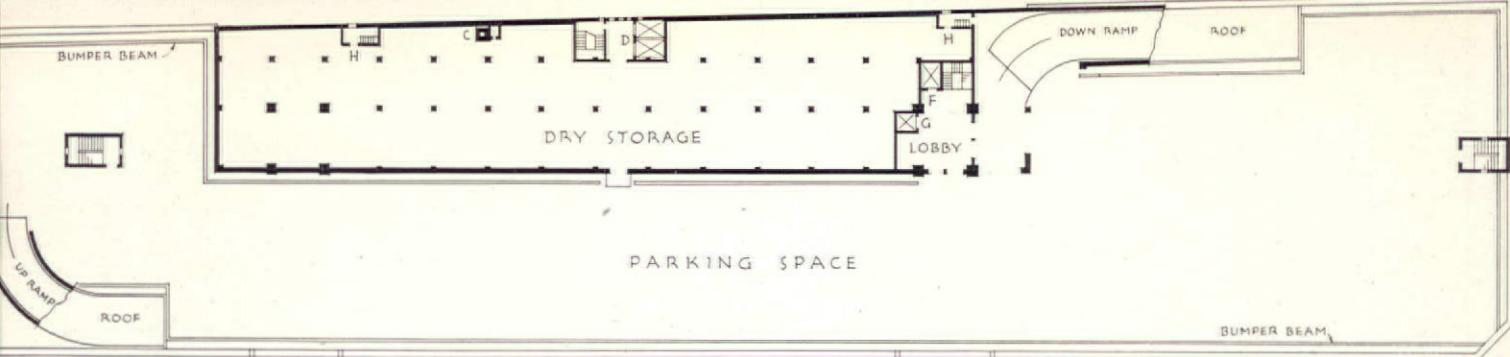
TRANSVERSE SECTION

NEAR Portland's business center and between two bridges the market has a strategic location, and marks it "Market" with tall twin towers. The building presents its loading and trucking side to the river, its customers' face to the city

Lower left. The bones of the building show, in the transverse section, the two-story main market space over 40 ft. in the clear; the mezzanine which encircles the building; and the upper floors for storage of merchandise and for parking. The basement is used only for services and mechanical plant, arranged as shown in the plan below, as the rest of the site is unexcavated except for pipe trenches

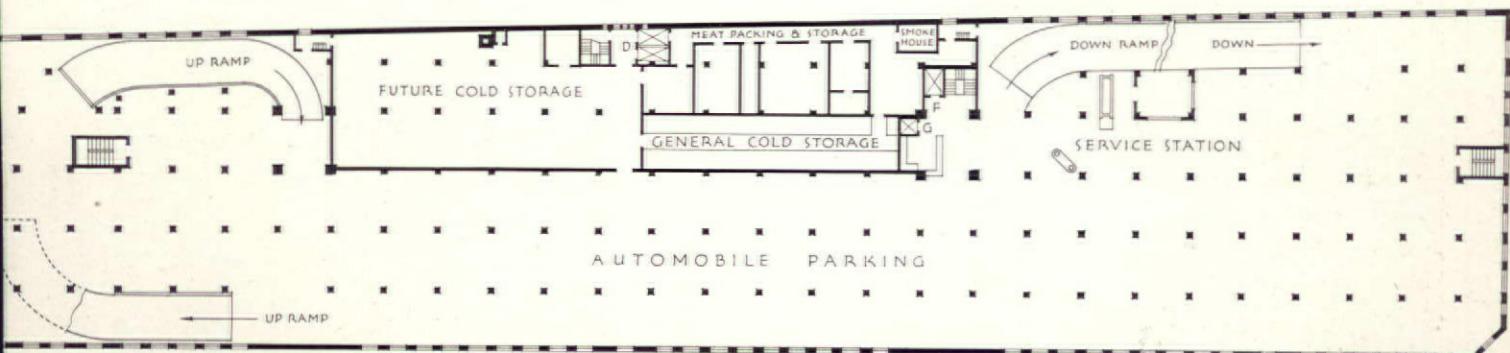


BASEMENT



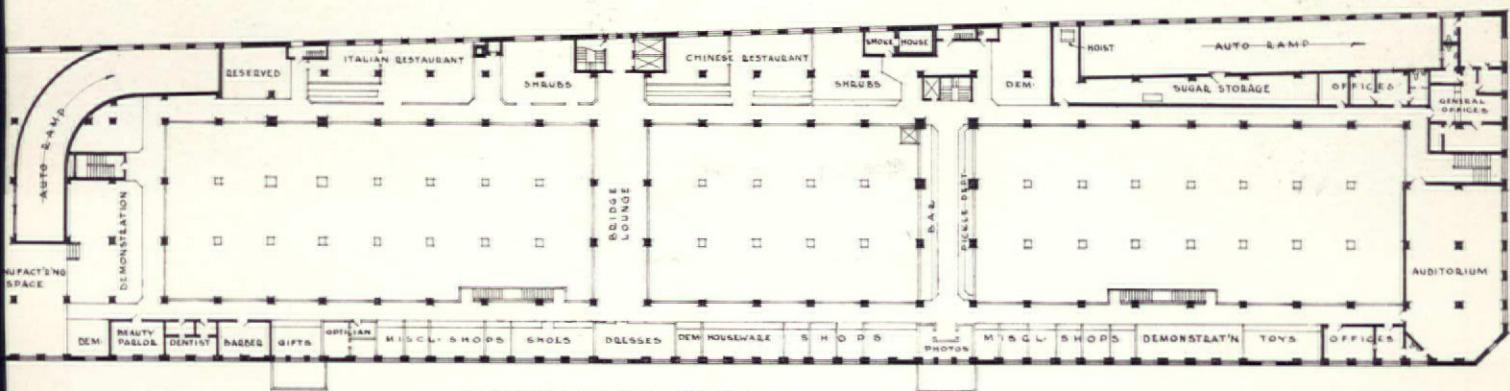
### MAIN ROOF and THIRD FLOOR

The main roof is used for open air parking of cars and for enclosed dry storage of merchandise



### SECOND FLOOR

The grand colonnaded parking area occupies most of this floor. Cold storage and a gas station complete its services



### MEZZANINE FLOOR

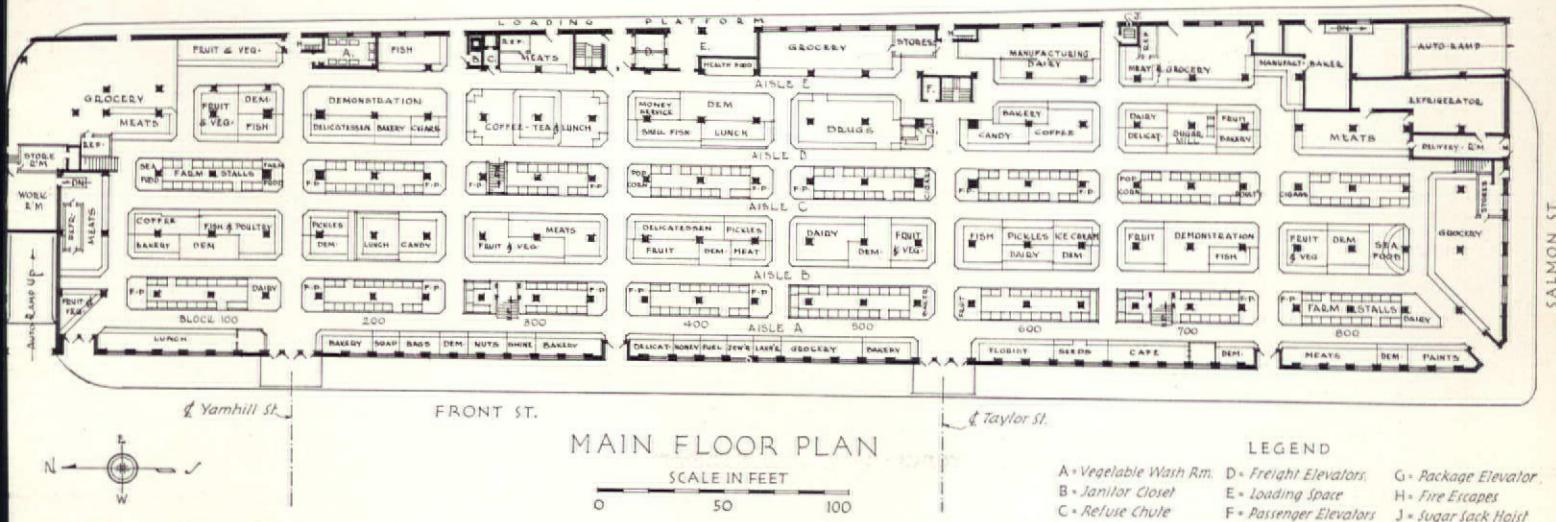
Shops and restaurants, offices and an auditorium take up most of the mezzanine. Crossover bridges aid customer circulation

WILLAMETTE RIVER

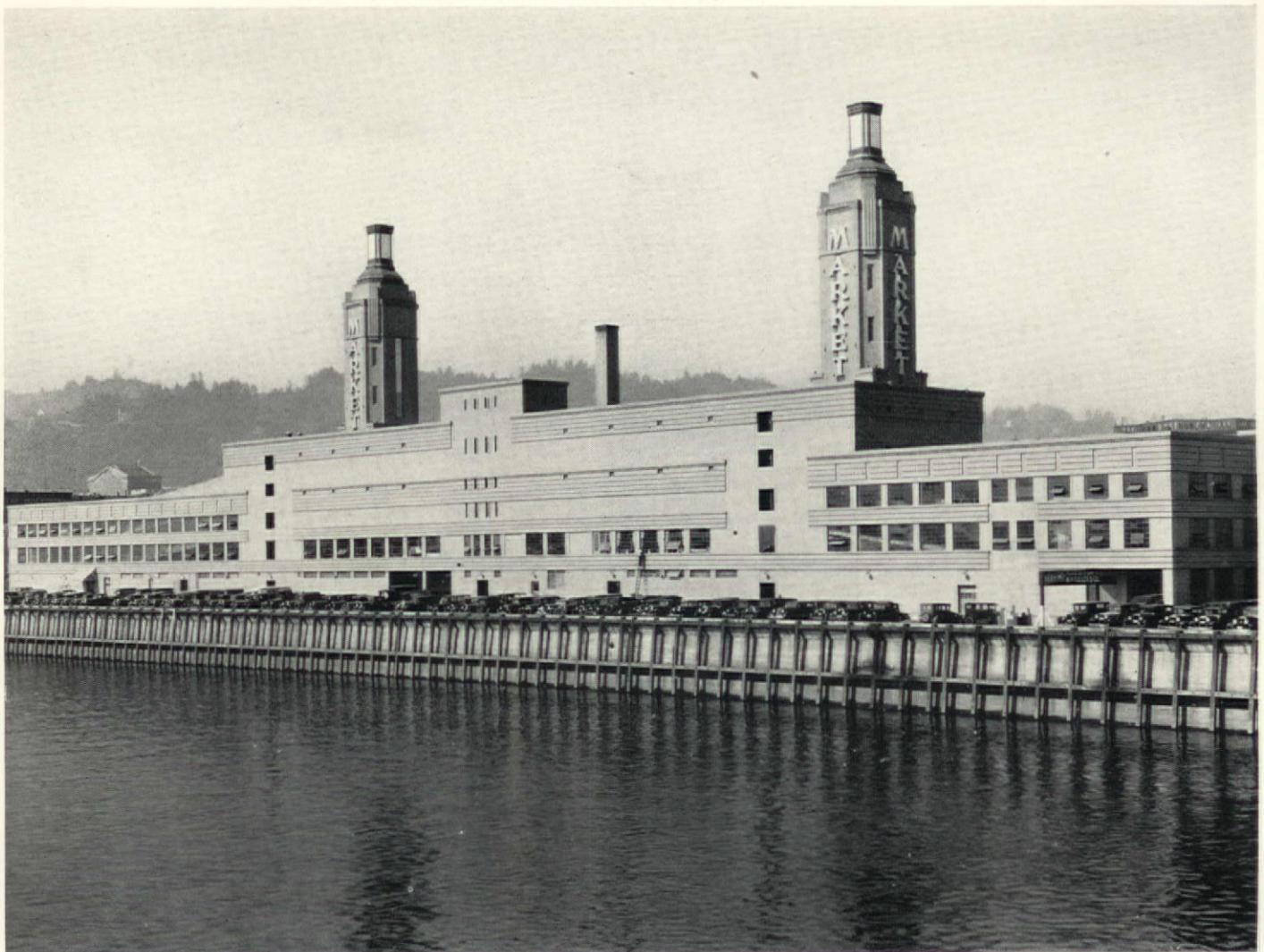
HARBOR WALL

PLANTING STRIP

DRIVEWAY



Thirty-one islands and a perimeter of shops provide miles of counter space for 120 food concessions, not including the 298 farm stalls



*The Willamette River facade presents a straightforward, simple mass, accented by horizontals, pierced only by fenestration as necessitated in plan, surmounted by sign towers 150 ft. high*

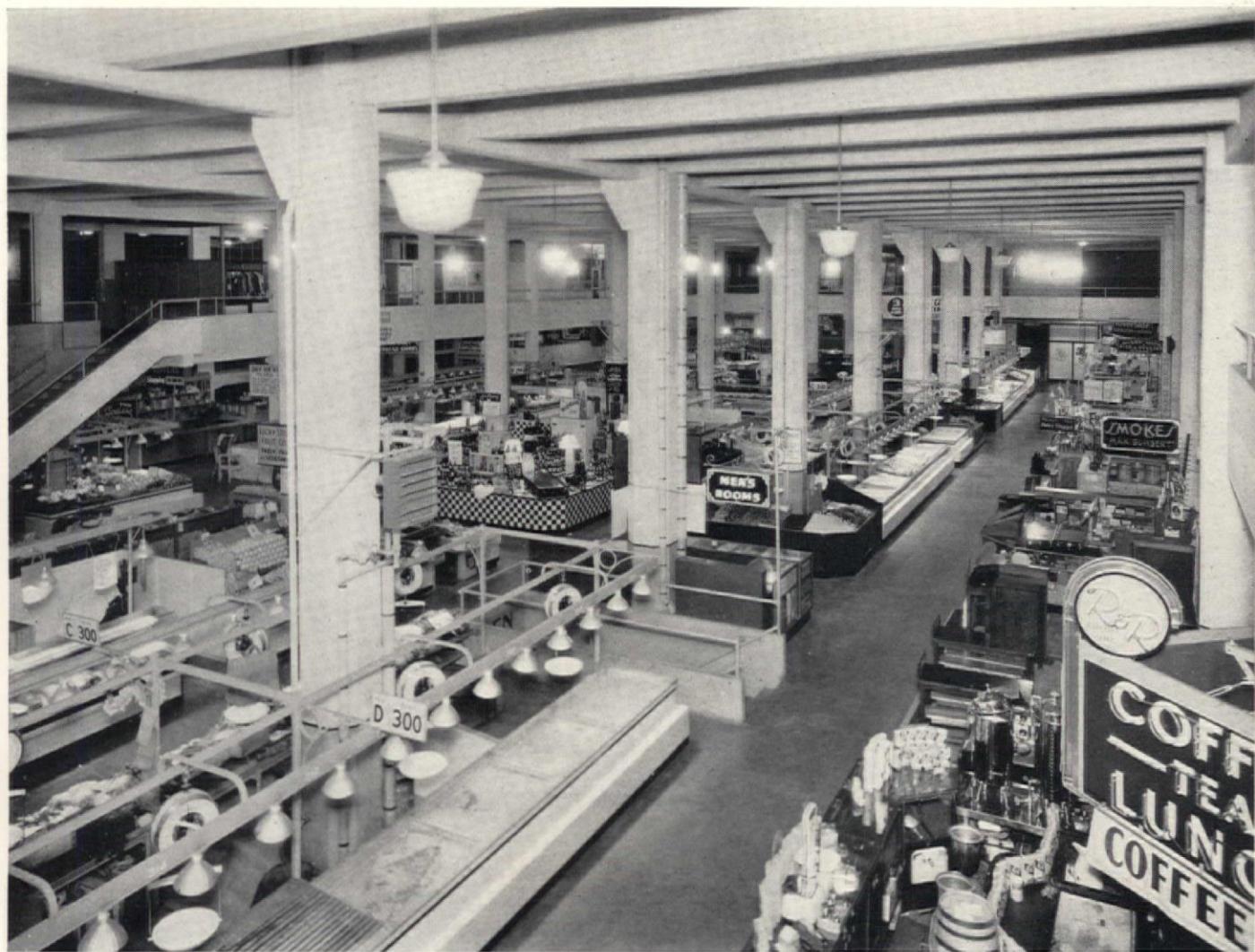
water and general lighting; janitor and watchman service; dry storage (in the roof penthouse). For the protection of customers and merchants alike, general supervision of weights, measures, quality and sanitation is exercised over all tenants. The installation of one make of springless scale was made mandatory. The 298 stalls for producing farmers are rented on a day-to-day basis.

Both site and policy dictated traffic control and parking arrangements—site, since there were no public squares or large open spaces to accommodate the customers or concessionaires' cars; and policy, since ease of access from car to shop, plus the safety of customers and their cars, add to tradesmen's profits. The plan solved the traffic problem by placing the customer car entrance to parking at the northwest corner of the building near the bridge. Parking for 650 cars is provided on the second floor and roof.

Customers follow an easy route and ritual. They drive up the ramp, park, descend by stairs or elevator to mezzanine shops or down to main floor. Here they can get a "Handy Ann" cart (see page 280) to trundle around, putting in its roomy basket their parcels of purchases and

even on occasion their tired offspring or the family pup. The package basket is checked for delivery to the owner's car and sent up on the package elevator. The customer follows it, taking the passenger elevator, and the package is ready at his car when he departs. The exit ramp is at the southeast corner of the building so there is no confusion or crossing of incoming with outgoing cars. Pedestrian shoppers may use any of the six entrances on the west, Front Street. The loading platform for tradesmen's trucks extends along the driveway on the river side of the building.

The primary function of the building being to sell food-stuffs, a maximum amount of floor area was provided. The market is 616 ft. long and has an average width of 137 ft. with a renting area of 47,000 sq. ft., 21,000 of which is on the mezzanine. The complicated assortment of concessions and their respective requirements made it advisable to lease concessions while the building was under construction. In general, however, it was assumed that heavy concessions would be located along outside walls or on the mezzanine floor. At the north of the building is a trucking tunnel, planned to direct this type of traffic through the



*Extreme functional simplicity marks the great hall of the market as all interest is centered on the merchandise displayed on the counters of concessions and on the farm stalls*

building, rather than along Front Street, to the loading platform.

**Structure and Finish.** Structurally the building is entirely of reenforced concrete, divided into three parts by expansion joints made continuous through walls, roofs, and intermediate floors at the north and south ends of the four-story portion of the building. The girders at expansion joints are carried on corbels with bronze plates, and U-shaped copper strips and mastic are used to make weather-tight joints.

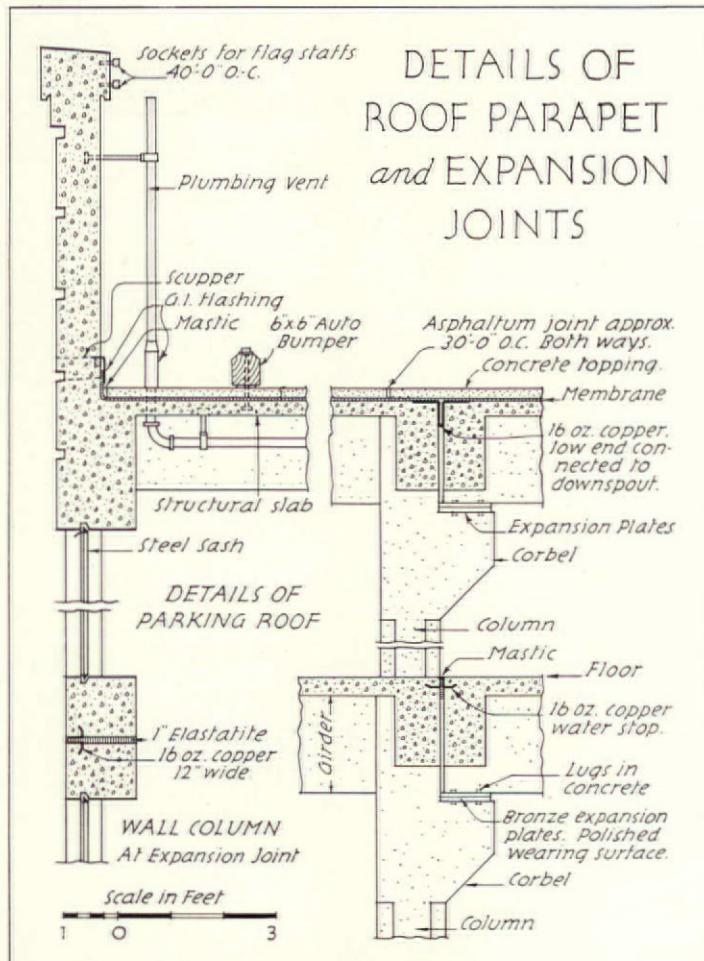
In general the structural walls and columns have been left exposed-concrete, painted with two coats of cold water paint, and having a wainscot of lead and oil 5 ft. high. The rest rooms, the auditorium and the company's offices were given a plaster finish. Hot and cold water mains, steam mains, and even refrigeration lines were frequently left exposed. General requirements of the concessions near the center of the building made it necessary to rough in cold water, gas, electricity, and telephone connections at each free-standing column. For the heavier concessions on the mezzanine and along the outside walls there are refrigeration lines and hot water. The farmers'

stalls were supplied with overhead frames for display signs and scales, and have iron pans 3 ft. wide and 4 ft. long with separate drains set into counters faced with tiles and having a package ledge 6 in. wide. There are adequate floor drains throughout.

All floors are monolithic slabs treated with a hardener. The first floor, except over the basement, was poured directly on dirt. The roof was covered with a 2 in. concrete wearing surface in 30 ft. squares, with expansion joints made tight with mastic. An interesting safe-guard in the basement is the reenforced concrete under-floor beams, built to resist the upward pressure of high water in the Willamette River.

**Mechanical Installation.** Complete flexibility of all phases of the mechanical installation in a building where tenant requirements were to be so widely divergent would have been almost prohibitive in cost. In general, water, waste, gas, electric conduit and telephone conduit were roughed in at all isolated columns and run under ground.

**Heating.** Three boilers equipped with oil burners provide steam for the low pressure gravity vacuum return



A package elevator carries the customer's parcel basket from the "Handy Ann" cart (foreground) and delivers it to a checker at the parking floor. Customers take the passenger elevator adjacent at the rear

differential system. The main market space is heated with blower type unit heaters mounted on the columns. In summer the fans can be used for cooling. The auditorium is equipped with two unit heaters but the offices and enclosed mezzanine shops have direct radiation. Basement rooms are heated and ventilated by forced air, with intake and exhaust grills under the east loading platform.

**Plumbing.** There are two 4 in. fire lines and one 3 in. house line. Vent lines extend to the second floor ceiling and thence to the outside walls to avoid interference with packing on the roof.

**Refrigeration.** The brine circulation refrigeration system is equipped at present with a 30-ton compressor, two 30-ton ammonia tanks and one 1,280 cu. ft. brine tank with agitator. Walls, ceiling and floors of the cold storage

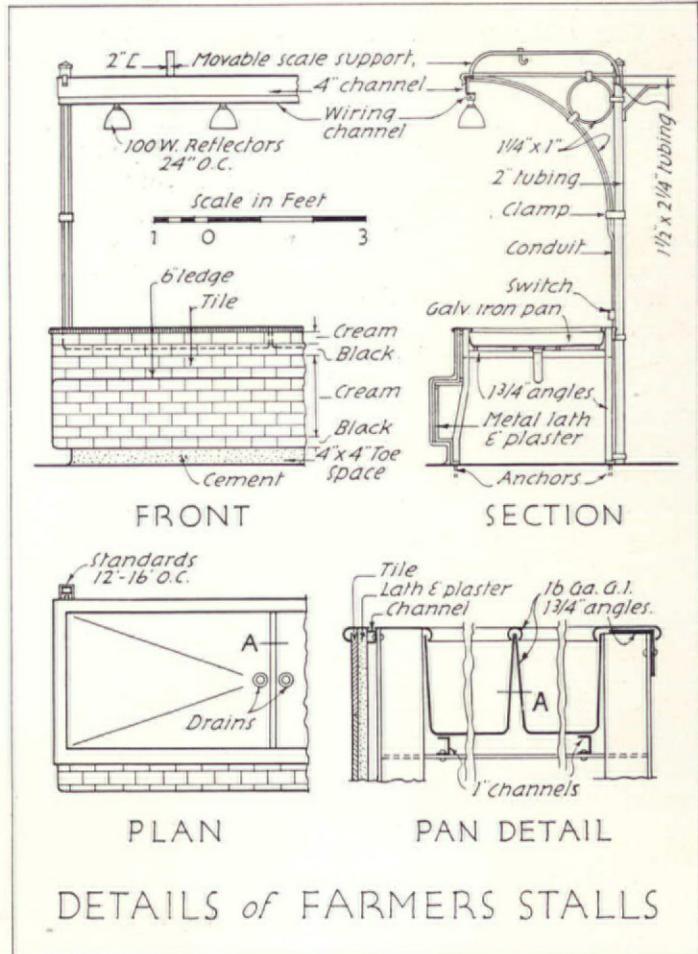


*Farm stalls are clean, compact, convenient, with a package ledge that expedites transactions. Produce is flooded with light from the 40-watt bulbs in overhead units 2 ft. on centers*

room are insulated with 4 in. of cork. The floor has a 2 in. concrete topping. The majority of small concessions use unit type mechanical refrigerators or ice.

*Electrical System and Lighting.* A four-wire combined light and power bus system supplies lighting current at 123 volts, power at 213 volts. General lighting for all sales space is provided by diffusing glass units in sizes from 10 to 18 in. in diameter. Over the main portion 500 watt 18 in. units are used. The parking roof is floodlighted from the parapet of the four-story portion. Extra intensity neon lettering in red and green makes the town signs brilliant and most of the display and directional signs are neon also.

There are two manual control freight elevators, one passenger elevator and a multi-button-controlled package elevator.



# "HORS de CONCOURS"

WITH KENNETH MURCHISON

VICE-PRESIDENT, CENTRAL SAVINGS BANK

*Also, my friends, A.I.A.*

Now that the architectural profession has seen fit to project me bodily into other spheres of what may be hoped is usefulness, I don't see as much of the boys as I used to. But I still read about architectural doings with avidity. I scan all the journals and get unduly excited when I see a cage of iron work going up in the distance.

As I look back on a fairly active life, I find, like everyone else, that my judgment was bad\* in many cases — those in which I went into syndicates for perhaps more than the architectural fee, set-ups which looked like my money back, with a profit, plus the job itself being in the office. (It sounds good, even now.)

**Foreclosures.** I have explained from time to time in this gazette that the Beaux-Arts Apartments in New York City were financed by a group of slightly insane architects without a mortgage; that is, by the issuance of First and Second Preferred stock. The only possible mistake in that arrangement is that the owners have no one to give the building to! No mortgage, consequently no foreclosure and no mortgagee.

Buildings are being given back to the mortgagee every day, but in the Beaux-Arts case what could we do? Ben Morris might give it to Whitney Warren and Whitney might give it to Frank Voorhees and Frank might give it to Jimmy O'Connor . . . and so on, far into the night. And looking for architects these nights you run the risk of sitting on a freshly painted park bench.

But let me reassure the Beaux-Architects. Everything is jake on that proposition. The buildings are paying everything except the expected dividends. These are not yet in the old pants pockets. But the place wears an air of prosperity and the noise that comes out of the windows at 2 A.M. is terrific. Lots of the tenants seem to be still using their bathtubs for the manufacture of gin and for wading purposes. That's the reason why the architects of the buildings kept the bathrooms small. There's no use in having commodious bathrooms in apartment houses. The guests crowd 'em up so. A bathroom is a place for one person, not a convention.

**Banking Debunked.** But just between us boys, this banking business isn't so hot either. It has a demoralizing effect on my carefully acquired spendthrift ways. Everytime I seat myself now in the better places and smack an anticipating lip as I prepare to pick just the right vintage Chateau Yquem, a regimented line of depositors emerges from the wine card and they all look at me accusingly. Benjamin Franklin could toss off thrift adages with one hand and Sauterne with the other, so I guess Ben had the edge on me. And I'm no tyro at getting an edge on.

But that isn't the half of it. Another thing I don't like about banking is that I am always exposed to personal

\* That, of course, was before I became a banker. My judgment now is perfect. I don't say anything.

danger. Not that our bank isn't safe. We haven't seen a burglar since we opened it. It's not the burglars I'm afraid of; it's our burglar resisters, those gallant lads who stand on every unoccupied spot all dressed up with guns and no one to shoot. Ultimately they are going to get sick and tired of peace and when they do naturally they will start on the biggest target in the place. Besides, the only expense to the bank would be a change of stationery if it lost a Vice-President.

**Unwin Again.** How does it come about that a man who looks so much like an incurable rosebush trimmer as Sir Raymond Unwin can be a genius at slum clearance? I can't make up my mind whether he looks more like a character out of P. G. Wodehouse, or that great American — Caspar Milquetoast. Certainly no one would ever guess on first or fifteenth sight that beneath that baggy suit there beat the heart of a housing genius. And yet there does.

I wonder if, after all, his enthusiasm for town planning, garden cities, sunlight and fresh air isn't a rosebush zealot's way of getting everybody planting rosebushes.

You know, of course, that Sir Raymond is with us again, this time as a guest of the National Association of Housing Officials. They're hauling him about the countryside — twenty cities or more — showing him the same thing in each town — a handful of dirty children sleeping in the same room with an equally dirty uncle, last week's washing hanging over the dining room table, a row upon row of back houses three blocks away from the society belt.

I can't understand why we're so proud of our slums that we want an Englishman to come and take a look at them. Besides London has slums of its own. But they won't have much longer if I read the signs correctly. You know that whenever the Prince of Wales slaps a Bond Street tailor on the back, or dances with an American girl, or vice versa, that tailor and that girl are just as good as made. So that now that the Prince has endorsed decent housing, the British are likely to get somewhere. Perhaps if his interest continues, the contractors and architects will be able to put up one of those flossy shields on their under-construction buildings. Something like "Richard Roe & Son, Plumbers by appointment to H.R.H., the Prince of Wales."

The Prince goes up and down the land looking at the hovels his father's subjects live in, and he's not afraid to tell his father's ministers that they better jolly well do something about it.

It might be a good idea for President Roosevelt to go on a slum tour. He made a trip through the drought area, and right after it they had rain. If he has that much influence with the Almighty, perhaps he could do something with Secretary Ickes.



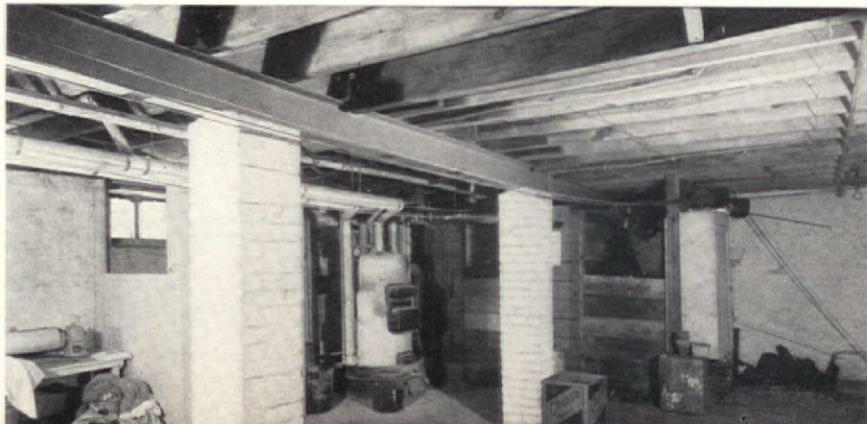
## RECONDITIONING FOR AIR COMFORT

... Air conditioning may be done in various ways with various means. How these work is explained in words and diagrams

THE architect who has obtained a modernizing job is interested primarily in what he can do to obtain better mechanical functioning of the heating plant and in just how he can air condition a building most efficiently with the equipment commercially available today. His immediate problem is not concerned with the home of the future with its windowless walls, hermetically sealed doors, and push button atmosphere. His client wants to know how his present home can be "air conditioned."

The definition of air conditioning as the control of temperature, humidity, air motion, and air cleanliness is useful in keeping our minds clear as to just what functions air conditioning embraces.

The campaigns to popularize air conditioning have accomplished two worthwhile results. First, the publicity on air conditions by some manufacturers has impressed many others, resulting in the development of apparatus of an almost infinite variety which, when used singly or



*Modern apparatus for conditioning air is almost a necessary concomitant of the alteration of such a cellar as this to the modern*

*recreation room shown above. The whole job done at one time will save money on both operations and produce a better result*

in combination with other apparatus, makes possible the fabrication of air conditioning plants of innumerable types, characteristics, and costs. This has worked out well, for in the case of modernizing much of the previously installed equipment must be salvaged, and to obtain a complete or partial conditioning system the existing system must be modified. The second result accomplished by publicity is that it has so interested the layman that if even a few air conditioning functions are added to his heating system he feels that he is in the modern trend.

Unconsciously, no matter how often we repeat the definition of air conditioning, most of us still think of it as *cooling* when without question *heating* is actually the most important air conditioning function. In approaching a modernizing job it is well to think first in terms of heating and to add other functions of air conditioning depending on local conditions, the client's wishes, and the amount the client wishes to invest.

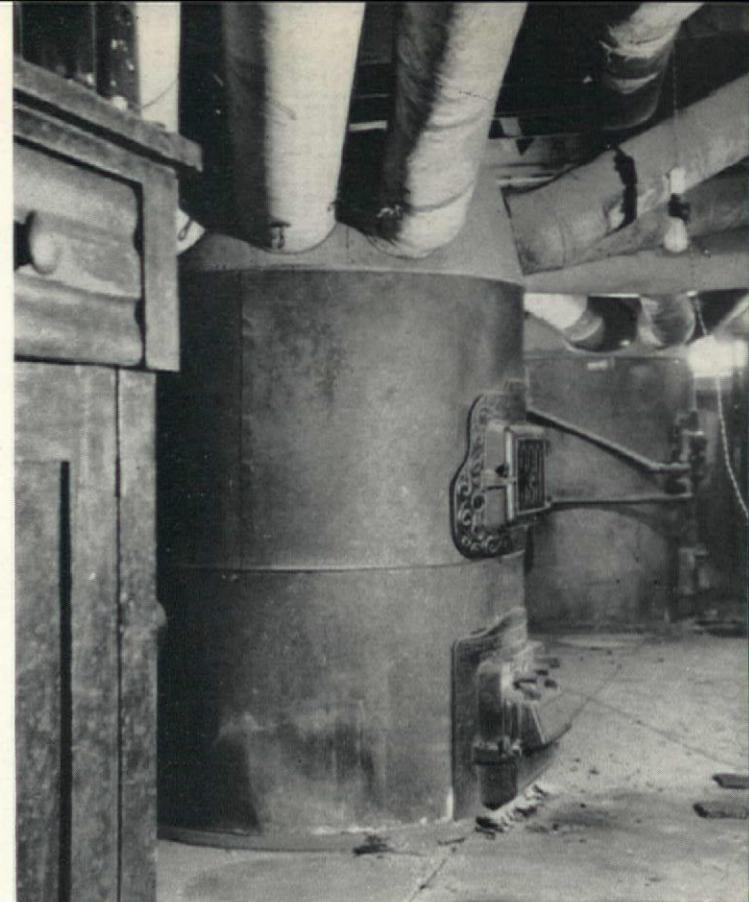
We use the word "invest" advisedly. In commercial buildings air conditioning can be shown in many cases to yield a definite return in the way of increased patronage and consequent profits, improved employee efficiency, and other beneficial results. In the case of a residence, however, there can be no such measurable — in terms of money — return, but there should be a marked improvement in the environment and even in the health and moods of the occupants.

With these thoughts in mind, the suggestions which follow are made in the order of cost, as far as possible; that is, the results to be obtained in the air conditions are listed with cooling (the most expensive of the functions) last. There is no attempt to make this a complete "check list," rather it is to point out modernizing possibilities. These possibilities are grouped according to the type of heating system considered either because the existing system is in such condition that it can be modified or because the client or architect may be partial to a particular type of system.

Further, as suggestions for obtaining the desired results revolve in great part around the equipment selected, much of this article concerns equipment; with the idea in mind, however, that in modernizing, in addition to the equipment, the architect is interested in what structural changes or modifications he must make in the building and in the existing heating plant. The modernizing of a heating system presents problems quite different from that of planning a new system, and as much present equipment as possible should be salvaged, repaired and used in the new system, in order to keep down costs in the interests of the client. It is poor economy, however, to use inefficient equipment and a makeshift system because excessive maintenance costs and poor results are sure to follow.

#### STEAM, VAPOR, AND WATER SYSTEMS

**Checking a Satisfactory Existing System.** It may be that the present heating system has been well planned, well installed, and operates so satisfactorily that the owner desires no alterations or additions. One of the reasons why the plant operates satisfactorily is that the chimney is of sufficient area and height. Therefore, the chimney should not be so altered that it will be of insufficient capacity, in adapting it to a changed architectural style.



*With this sort of a heating plant a cellar can never be anything but a cellar*

Regardless of the fuel, the chimney should be of sufficient capacity to accommodate a hand-fired coal boiler or furnace. Other installations will not need such a large chimney, but if this idea is followed and it is ever desired to convert the system for one reason or another, no alterations will be necessary in the chimney. If gas is to be used, it will be well to line the chimney with vitreous tile flue lining to prevent corrosion.

Have the breeching from the heater to the flues checked. This may apparently be in good shape when viewed from the outside, but the inside may be badly corroded. Beyond this, it may be that all the system needs is a good cleaning, and this should be kept in mind where other work is going on so that the various parts of the system can be cleaned at the proper time relative to other work. All "dirty work" on the heating system will naturally be completed early in the modernizing. This includes work on the chimney and the boiler or furnace.

Traps and valves of all kinds should be inspected. Maybe the system will need only a set of new air valves on the radiators, but a few of the traps may have failed. Radiator inlet valves may need repacking.

**Improving the Fuel-Burning Equipment.** The boiler already in the house may be in good condition but an automatic heating plant desired. The choice among oil burners, gas conversion burners, or stokers may be on the basis of the client's preference and/or on the basis of cost. This latter depends almost entirely on the locality. Manufactured gas is still fairly expensive, but its advantages are such that it may outweigh the increased cost, particularly since a gas conversion burner can often be installed for a very low price in territories where the utility is pushing the sale of this type of apparatus. For example, late in June a utility company in one large city in the East announced a campaign whereby a gas conversion burner



*With this sort of heating plant a cellar has all sorts of interesting possibilities*

could be purchased for less than \$160, including the thermostat. This is less than the first cost of an oil burner or stoker of equal operating efficiency, but yearly fuel costs always should be carefully estimated and compared.

Practically nothing in the way of change is required in installing a gas conversion plant beyond running a gas line from the meter to the burner. Consult the local utility company on this point, as an additional meter may have to be installed and this should be done while other alterations to the gas piping are under way.

Oil is usually less expensive than manufactured gas and such equipment has met with such favor in the past and has been so highly developed that it should be considered carefully. In this connection look into the market trends of the fuels since, in some localities, fuel oil has increased in cost rather rapidly the last few months.

If an oil burner is selected, have the excavation for the oil tank made while similar work is being done on the other parts of the grounds and basement. Have the work on the power lines and other wiring work coordinated with similar jobs elsewhere in the house.

It is not generally realized that stokers have increased tremendously in popularity during the last eighteen months, and the rate of increase in sales of this unit far exceeds that of any other type of fuel-burning equipment. Many stokers are equipped with ash removal appliances. As was the case in the early days of the oil burner, there are still some fly-by-night stoker makers. Either select a known reputable stoker or thoroughly investigate the standing of an unknown stoker.

After the stoker has been selected, locate the coal bin convenient to the hopper. With some stokers coal can be fed directly and automatically from the bin into the heater.

If the boiler is to be relocated or a new boiler is to be installed, check up on three points. First, if the boiler is cast iron, see that there is sufficient working space on the side to permit replacement of sections, if this ever becomes necessary. Second, see that there is sufficient room at the front of the boiler to clean out the flues. This should be watched especially if a sectional cast-iron or a steel boiler is replacing a small round boiler. Third, if no alterations are to be made in the basement walls, do not select a steel boiler which is too large to be got into the basement.

If a new boiler is to be selected, the boiler-oil-burner units should be carefully considered as well as boilers specially designed for, but not necessarily equipped with, an oil burner. There are similar units designed for stokers and for gas burners. Such boilers have somewhat higher efficiencies than the converted types, but they cannot be converted to coal if this were ever desired. The developments in these units of various types have been so spectacular the last few years that the architects, especially those who have been working on the larger type buildings, will find them worth studying.

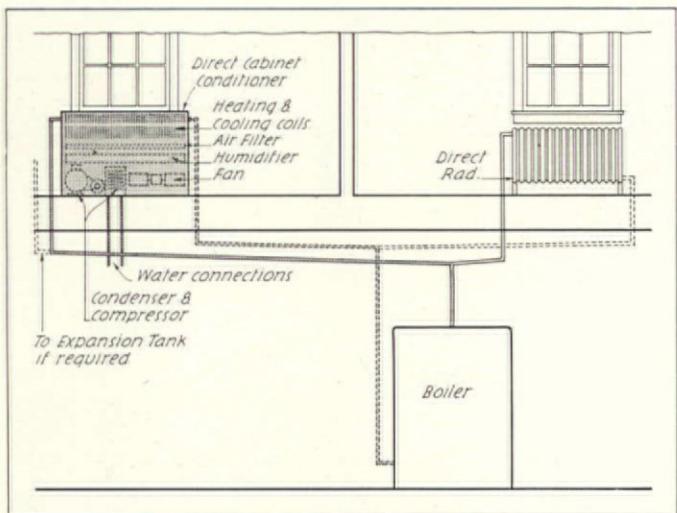
Then there is the magazine-type boiler which can be charged with enough coal at one firing to burn from twelve to 48 hours depending on the severity of the weather. Consequently, they can be classed as semi-automatic.

The addition of an automatic water feeder and low water cut-off to the present steam system is a rather inexpensive addition to the existing plant which is well worth while and requires only a simple piping change.

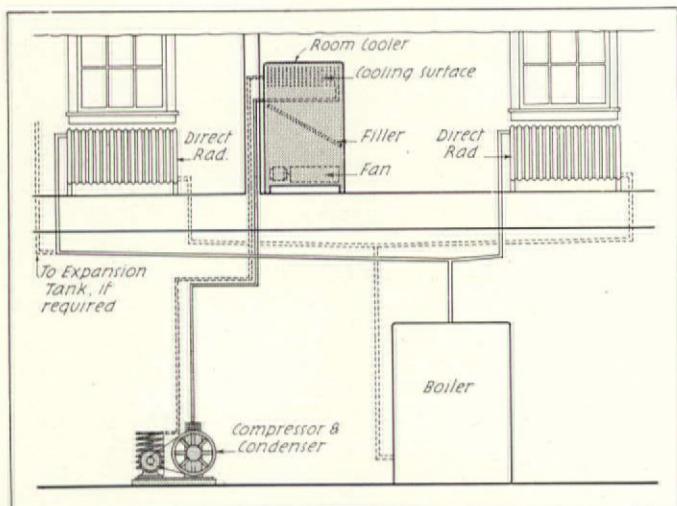
**Improving the Heat Distribution.** Consult with the client regarding the temperatures in the basement and if they have been high it might be well to insulate the piping. Insulation of piping does not always cut fuel bills as expected, since much of the heat from the basement eventually finds its way upstairs and helps heat these spaces, but is usually worth doing, especially if the basement is to be used.

The architect is fully acquainted with the use of brass piping in water lines, but now copper water tubing is available for heating lines where the pressure does not exceed fifteen pounds. Residence systems very rarely operate at pressures that high. Such tubing is available in three different types. One is designed principally for underground water service where the metal comes in contact on the inside with water and on the outside with the earth, moisture, and other corrosives. It can also be used for general plumbing purposes for the ordinary house installation. This type is made in soft temper so that it can be easily bent around obstructions, especially useful in modernizing. The latest type is used for both plumbing and heating purposes with soldered or sweated fittings. Soft copper tubing for modernizing heating systems is made in sizes for  $\frac{1}{2}$  and  $\frac{3}{4}$  in. up to and including 4 in. in diameter. Coils 60 ft. long are available. Use of such lengths cuts down the number of connections. This will result in savings of installation costs which may offset the increased material costs.

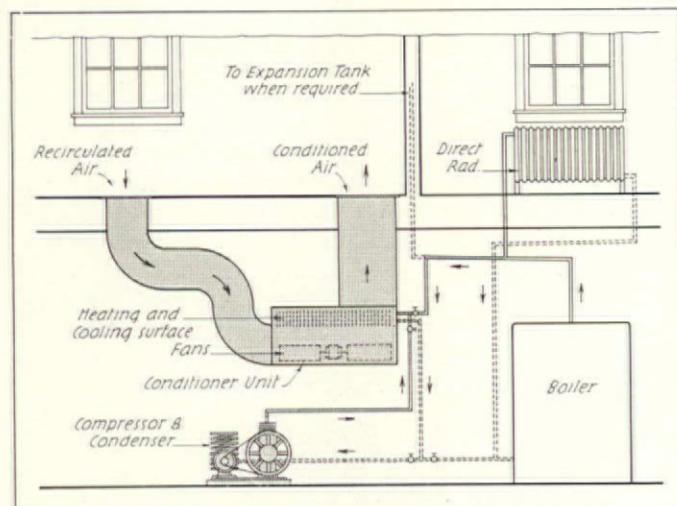
In remodeling work and in replacing old heating systems soft copper tubing is useful for working down between the walls since the walls need not always be opened. In addition to the ease of installation, such tubing has the advantage that it has a large steam carrying capacity considering its nominal diameter and has a



*Self-contained direct conditioner. Cabinet replaces radiator. Includes functions of cooling, cleaning, humidifying, and circulation; with or without heating as desired*



*Direct conditioner with remote compressor. Refrigerating machine located in basement or closet supplies refrigerant to one or more cabinets. Heating is optional*



*Indirect conditioner. Conditioner remotely located circulates conditioned air — cooled, heated, cleaned, and humidified, as desired*

smooth surface which offers low resistance to flow. A great advantage of course is in its resistance to corrosion.

**Changeover of System.** The introduction of an oil or gas burner into a heating system has at times complicated the heating problem. The intermittent burning often resulted in radiators being hot, then cold, particularly where a burner was controlled by a thermostat in one room. In addition, many existing buildings had a good heating plant in the basement, but a poor distribution system, resulting in cold radiators at far points.

Changing these conditions in such a steam system whether it is a one- or two-pipe plant is not difficult. Resistance to stream flow is usually the cause of cold radiators in the distant parts of the house, and by changing the system over to, say, an orifice system, this difficulty can be overcome. Such a change is not a major problem in the case of a two-pipe system, but where a one-pipe system has been installed, it will mean the running of an additional pipe to all the radiators. Consult with the manufacturers of such systems and obtain their recommendations. They will size the orifices from steam supply to radiator, according to the amount of radiator surface, distance of the radiator from the boiler, and the basis on which the existing piping system has been sized.

If a similar situation — cold radiators in some part of the house — exists in a hot water plant, possibly the addition of a water circulator may solve the problem. Beyond the cost of the circulator and connecting it in the line and hooking the motor to a power line, no other changes are involved.

**Convector.** Few architects will overlook the possibilities of doing away with old-type radiators by installing convectors. These are available in both non-ferrous and cast-iron types, and the improvement in appearance they make should appeal not only to the architect but to the client. Installation does involve tearing out of the walls underneath the windows or between the windows, depending on their location, but if alterations of this type are going on in other parts of the house it is not particularly costly. Whether these are installed in all parts of the house or not they certainly should be used in the living quarters if at all possible. Cast-iron convectors have overcome some of the objections which formerly existed to convectors, though such objections were principally traditional and resistance to the newer ideas.

**Controls.** To obtain satisfactory heat distribution within a room has been a difficult problem for years. Designers of controls are at last approaching an ideal situation. An almost unvarying room temperature can be obtained with modern room thermostats which remove the inherent lag of the old wall thermostat and eliminate expensive and uncomfortable over- and under-shooting of temperature. The architect's client may obtain more satisfaction from an automatic heating plant well equipped with controls which maintain an even temperature than from other types of equipment of a more spectacular nature.

One manufacturer has brought out a thermostat which is said to result in a considerable improvement in room temperature variation and departs from the conventional thermostat location as the thermostat is placed at a point about 4 ft. above the floor rather than the usual 5 ft. Other systems have the individual thermostat control on the supply valve of the radiator.

In large residences the system might even be zoned, with automatic controls to vary the supply of steam to each zone depending on the requirements of that zone.

The whole subject of control is so complicated that the best the architect can do is to consult both a heating engineer and the manufacturers, to get recommendations for the solution of specific problems. Almost any type of control is fairly costly, but usually the increased comfort is worth it. Naturally, it is not necessary to have the whole system packed with controls.

**Cleaning, Circulating, and Humidifying.** It has been pointed out that the functions of air conditioning which can be installed in connection with any type of existing heating system will depend largely on local conditions and the client's wishes. Several methods are available for obtaining clean, filtered and humidified air. These may be listed as:

- Direct conditioner
- Indirect conditioner
- Auxiliary air units
- Portable units

The first three of these are designed to give not only filtered air but to perform other functions as well. For the case where only cleaning is desired in connection with a radiator installation, the only recourse is to use window filters (semi-portable) and keep the house closed. These units keep out the noise and dirt and at the same time supply clean outside air. This in addition gives circulation in the rooms where the filter is installed.

a. The *direct conditioner* is a cabinet installed in place of a radiator, as it has a heating (and in some cases a cooling) coil which can be connected to the boiler and compressor. A fan forces the air through a filter and over the heat transfer coils. It is possible to add these cabinets in rooms where desired, and they are obtainable in some cases for circulating, humidifying, and cleaning the air without cooling or heating. Such equipment requires connections to the electrical circuit and to a source of water supply.

The disadvantage to room units of all kinds which cool or humidify is the necessity for connecting to a water line. Keep this in mind when locating such units.

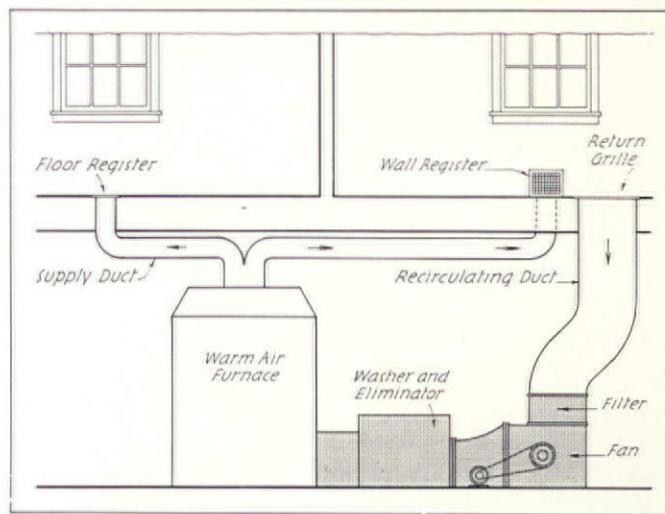
b. An *indirect unit* is one connected to the boiler and, where cooling is required, to a compressor. It consists of the same equipment as the direct conditioner except that the unit is located in the basement and the conditioner air fed through ducts to the rooms. The disadvantage of such a plant lies in the cost of the ductwork which is often difficult to install when modernizing a building. The direct conditioner is preferable in most cases for this reason.

c. The *auxiliary air system* consists of fan, filter, and washer unit located in the basement and supplying unheated and uncooled air to the room which is heated by direct radiators. This air is usually introduced under the radiator so that it is warmed in the winter by the radiator. In the summer it can circulate filtered air.

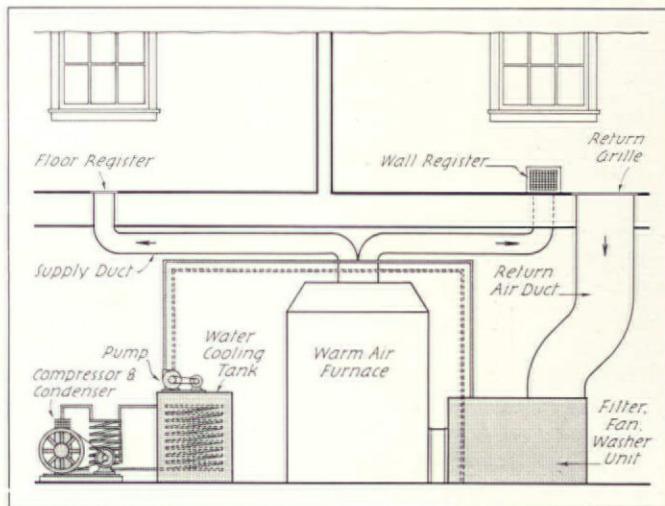
**Cooling.** There are a number of ways of accomplishing cooling. Among these are:

- The use of ice
- Installing a mechanical compressor
- By an evaporative cooling system

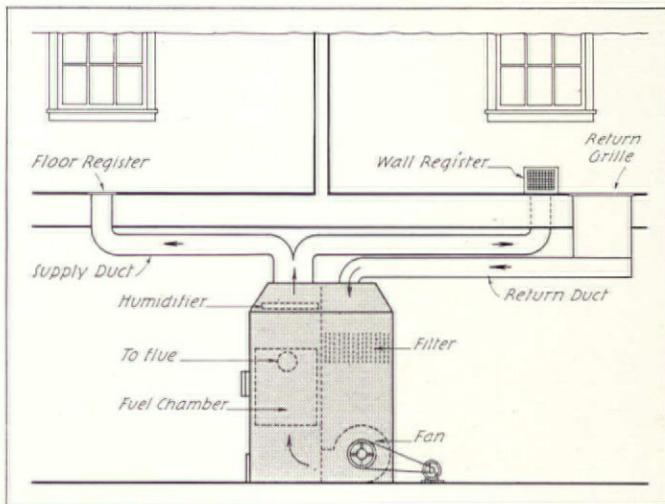
a. *Ice* can be used for cooling in connection with a radiator plant either by (1) using an indirect conditioner — that is, by chilling water in the basement and circulat-



*Furnace conditioner, conversion type. Warm air furnace with cleaning, humidifying, and circulating functions added. May be added as separate functions to old or new furnace*



*Furnace conditioner, conversion type with cooling. Single unit cleaning, humidifying, and circulating added to furnace and connected to cooling. Ice or water may replace mechanical unit*



*Furnace conditioner, integral type. Functions in same manner as above but everything is combined in one unit. Cooling may, in some cases, be added*

ing it through heat transfer surface in the rooms; (2) having an auxiliary air plant which is used only in the summer for circulating the cooled air; or, (3) having individual room coolers charged with ice. The indirect system is probably the most practical, but it has not been developed to the point where it can be recommended for most cases. Selection of this equipment depends entirely on local conditions such as the ice rate, and it is suggested that before making such an installation the architect consult with specialists in cooling with ice.

b. *Mechanical refrigeration* can be used: (1) with an indirect conditioner (which has the disadvantage of high cost for running ductwork alone for cooling); (2) with direct conditioners connected to a compressor located in the basement (the disadvantage of which is the cost of running piping to the rooms); or, (3) by the use of unit coolers. Self-contained room coolers can be controlled manually or automatically, or by a combination of the two, and all that is necessary in the way of alterations is to run a power line and a water supply line to the unit and a waste line to the sewer. The units with a distantly located condenser are in many cases preferable to the self-contained type. With these, the refrigerant piping must be run to each unit, but on the other hand the water and waste lines are needed only at the condenser location.

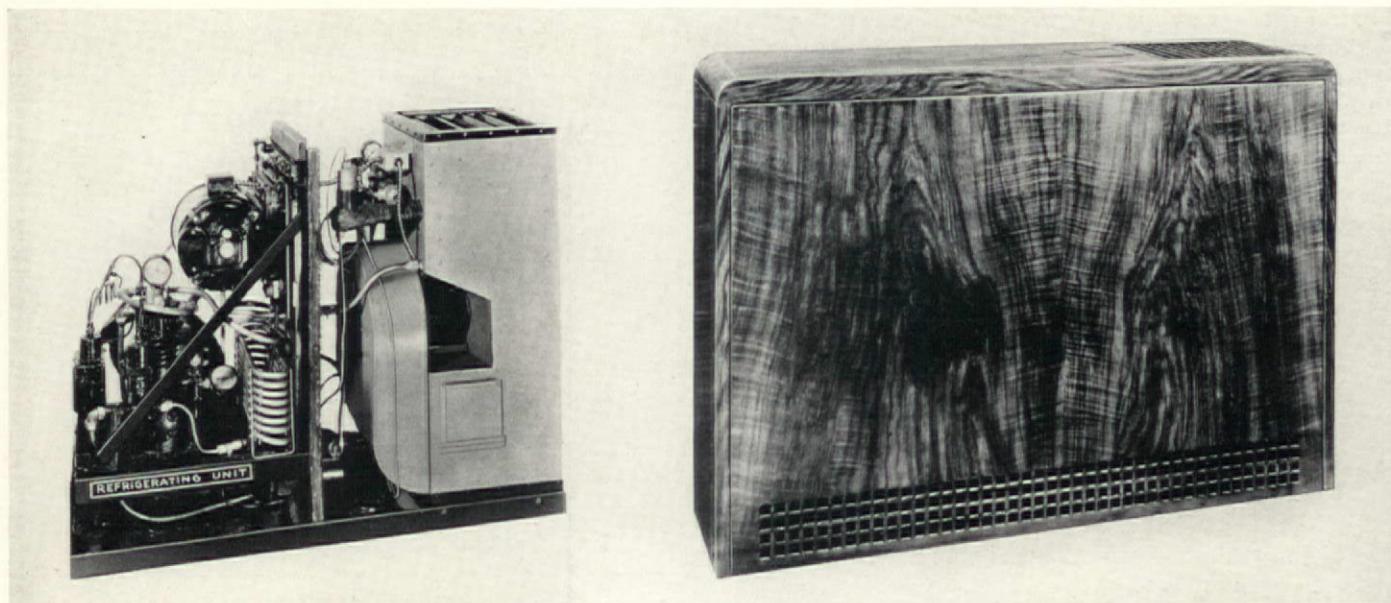
c. *Evaporative cooling* can be obtained in several ways, one being simply to use city or well water which, when evaporated in the warm air, cools it. This is usually practicable only in dry, hot regions where the humidity is low and the wet bulb depression large, such as in Arizona, Utah, Idaho, and such States. Care must be exercised in such installations to insure that the wet bulb depression is sufficient as otherwise the humidity may be increased to a point of discomfort. In other sections where the temperature of the city water supply or well water is sufficiently low, the circulation of water in coils provides cooling for the conditioned air. Both of these methods of cooling are more suitable for central systems and require ducts to introduce the conditioned air. They can be used only in connection with radiator heat where

such separate systems are planned for. The same is true of evaporative cooling with a silica-gel system which will be explained later.

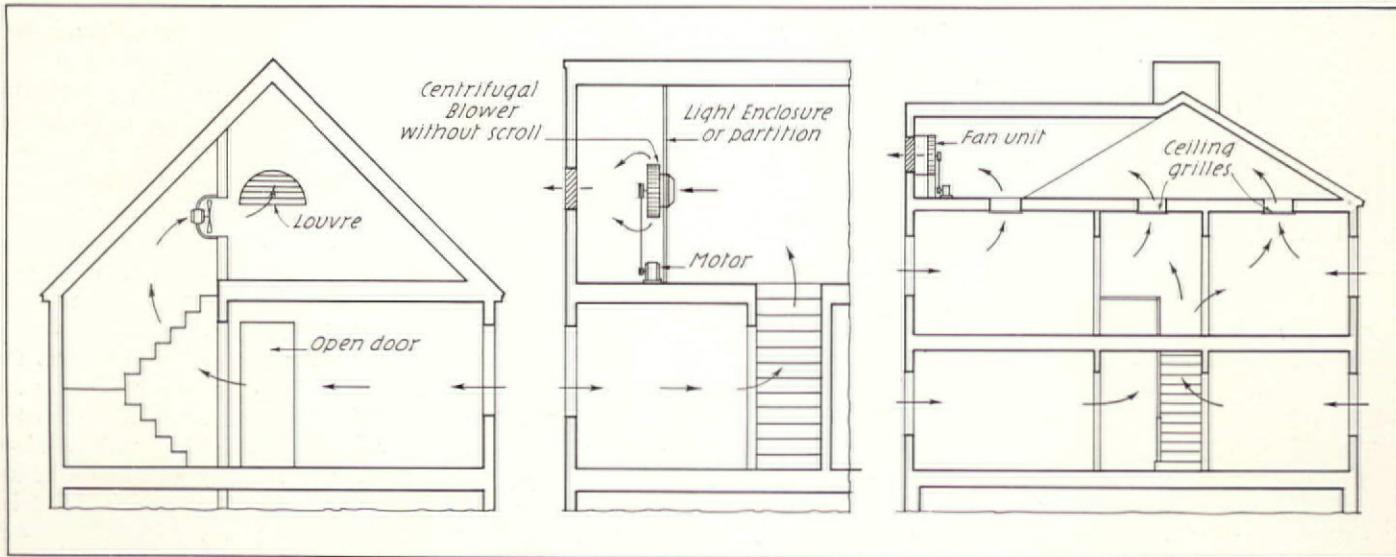
In planning any air conditioning system it is essential that the necessary power supply and house wiring be properly provided for. Furthermore, in selecting and specifying equipment for any locality the characteristics of the available service, such as voltage and phase, should be determined in advance.

Cooling is the most talked of function of air conditioning at the present time and, notwithstanding what the skeptics have to say on the subject, is increasing rapidly in popularity. While cooling is too expensive for the average homeowner to indulge in to any great extent at the present time, this situation is changing so rapidly that it is necessary to know just what the owner considers a reasonable charge before deciding whether or not to include cooling in the modernizing plan. For example, we have pointed out that a unit cooler is probably the best type to use in connection with a radiator-heated house and within the last few weeks a  $\frac{3}{8}$ -ton unit has been placed on the market to sell for less than \$350. Even the owner of a home of no particular pretensions may be willing to have at least one of these units. With the unit system the cost is almost directly proportional to the number of rooms being cooled, and if the owner is satisfied with one or two cooled rooms the cost is not necessarily too great.

**Cooling with Attic Ventilating Fans.** There is a simple and rather inexpensive means whereby the house temperature can be kept appreciably lower than that outside, particularly in the sleeping quarters on the second floor. The method of accomplishing this is quite simple and is based on the fact that while the indoor temperature may be somewhat below the outdoor temperature during the day time, in early evening this situation is often reversed. By installing an exhaust fan in the attic and leaving the doors and windows of the house open during the night, the hot air is exhausted and the cooler outside air is pulled in and circulated during the night.



*This cabinet type cools, cleans, humidifies, and circulates as a unit*



*This diagram shows the various ways in which a fan may be used to contribute to the movement of air through a house*

Installations have been made using either centrifugal or propeller type fans. The fan can be installed in the stairwell or against a louver in the attic. The latter plan cannot be used if the attic space is not tight, since much of its capacity would be used in circulating air through the attic. If the fan is installed in the stairwell, however, and exhausts air into the attic it will build up a pressure in the attic and, consequently, flow out to the outside through louvers. In some cases it may be more convenient to install grilles in the ceilings of the second floor rooms rather than keep the attic door open. In such a case the connection between the fan and the grille should be constructed of some material which will eliminate the possibility of vibration and absorb air noises.

Disadvantages of the attic ventilating system are, the necessity for opening and closing the windows, doors, etc., and, in dusty locations, the amount of dirt pulled into the house through open windows. This latter may be of importance to hay fever sufferers.

Making a habitable room out of the basement is no new idea. Neither is the conversion of attic space into attractive quarters but one handicap towards accomplishing this is that unless the building is insulated this room may be quite hot in the summer. The addition of an attic ventilating fan overcomes this.

**“Cooling” by Insulation.** When modernizing a residence the architect can coordinate the design of the whole house with the mechanical equipment. The advantages of insulation in reducing fuel consumption are too well known to discuss here. However, the insulating property is not to be ignored in the summer. Just how much the temperature of a house can be kept below that of the outdoors by insulation depends on a number of factors, including location, the amount of glass area, how well the windows and walls are shaded from the sun, and similar factors. Consequently, no definite flat percentage can be given. However, there is fragmentary evidence to show that insulation of a type which can be applied when modernizing can keep the inside air from 8 to 15 degrees below that of the outside temperature. Insulation of roof or attic is usually cheapest and most effective.

#### WARM-AIR SYSTEMS

Numerous ideas suggested in the previous paragraphs relating to steam and water systems apply also to warm-air plants, particularly those regarding the chimney, cleaning the system, ventilating the attic, and insulating the house. The remarks which follow apply specifically to warm-air plants.

**Changing Ducts.** The gravity type warm-air furnace had one serious disadvantage in that large ducts sloping up towards the rooms from the furnace were necessary. When fans are added to the system this is no longer necessary and, if the furnace room is to be made habitable, flat rectangular ducts may be used to increase the headroom and vastly improve the appearance. These can be connected to the old stacks so that the only work required is that of installing the new ducts in the basement.

**Modern Grilles and Registers.** Even if the existing warm-air system is to be used, it is quite possible that it will be to advantage to install new registers and grilles. In the first place, advances have been made recently in the design of such equipments, making it much more attractive than formerly and, at the same time, more efficient as air distributors.

One engineer has set forth requirements for grilles and registers under five parts, as follows: (1) they should be as unobtrusive as possible; (2) should hide the duct-work behind or below when the grille is open; (3) should offer but little air resistance at both high and low air velocities; (4) should create no air sound; and (5) should diffuse the air they deliver.

Very few structural changes are necessary in fitting new registers to a system, and the only problem the architect will face is selecting from the number of modern grilles. There are four general types: one which straightens out the air current even when the dampers are half closed; a second has deflectors which throw the air in two different directions; while a third design incorporates thin strips of hard rolled steel as fins so shaped that they act as protectors or guides and they can be shaped so that the air is guided in different directions. A

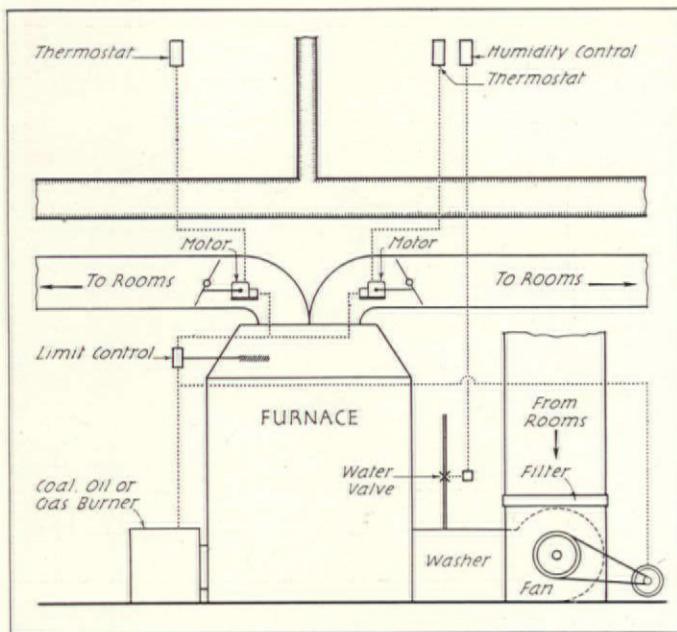


Diagram illustrating method by which different rooms may be maintained at different temperatures with the same relative humidity

fourth type, "modern" in appearance, has narrow steel strips instead of cross grille work. This increases the amount of free area with consequent lessening of air resistance.

Consideration should be given to the location of the grilles if air conditioning is to be added to the function of the warm-air plant. Successful installations have been made with both the inlet and outlet on the same side of the room. In some cases this is an inside, in other cases, an outside wall. In locating the grilles remember that if cooling is to be added the cold air falls to the floor while the heated air rises. In general, cooled air should not be introduced at the floor level where the old warm-air registers were located.

**Controls for Forced Warm-Air Plants.** In addition to the thermostat, combinations of controls can be used to advantage on an automatic forced-warm-air plant. The oil burner, gas burner, or stoker is controlled by a limit control which is a form of thermostat installed in the bonnet of the furnace. When the temperature becomes too high in the bonnet, the firing device is shut off. The thermostat controls a motor which opens and closes dampers in the ducts leading to the area controlled by the thermostat, and there can of course be a number of such thermostats. A humidity control will operate a water valve which supplies air to the air washer, and the furnace fan motor is also connected to the limit control in the furnace bonnet so that the fan will shut down when the firing device is off. It may be shut off simultaneously with the firing unit or operate as long as there remains enough heat in the furnace to circulate. The fan can also be used as a safety device by starting up if the furnace temperature becomes too high, thus distributing the heat. In the summer time the thermostat circuit can be reversed so that the fan starts as the temperature increases, permitting the air to circulate and provide a cooling effect.

**Circulating, Cleaning, Humidifying.** When it comes to

modernizing, the warm-air system has greater advantages than the radiator system if air conditioning is to be added, because it is quite a simple and inexpensive thing to add fans, filters, and cooling equipment to an existing system. The addition of fans is so common that it need be given no particular attention here except to note that these are available in both centrifugal and propeller types and with spring or rubber mounted motors to make them noiseless. So long as the fan is to be added, however, we may as well add additional functions since there are available units which contain a washer for humidifying in the winter, a fan for circulating, and filters of the throw-away type all in one. These require no structural changes in the building whatever and the only change necessary in the system is to connect them in and hook them up to suitable controls, power line, and a water line. The throw-away type of filter is particularly well adapted to residence use since it is not messy and replacement is simple. The filters available are of various kinds, made from glass wool, paper, textiles, and other substances.

We have mentioned the addition of an air washer to the furnace plant for obtaining humidification. This method is, generally speaking, to be preferred to the pan type. Either type must be connected to a water line.

**Cooling.** When air conditioning first began to be talked about seriously, it was felt that cooling could be added to an existing warm-air plant without any changes beyond the addition of the cooling equipment. Experience has shown, however, that the existing duct-work usually cannot be used effectively if it was designed only for heating. A simple calculation will show that for *heating* air is introduced at from 60 to 80 degrees above the room temperature, but air for *cooling* cannot be introduced into the room more than 15 degrees below the room air, otherwise it will create a draft. Neither can it be brought in at a high velocity. This means that a much larger volume of cool air must be introduced, and since we cannot increase the velocity to any considerable extent, we must have larger ducts than were needed for heating. This is important in modernizing.

There is no reason why room coolers cannot be used in connection with a warm-air system if this is desired. Evaporative cooling is desirable where this can be done.

**Dehumidifying.** One such method is the silica-gel system of evaporative cooling. A portion of return air from the building plus outside air is drawn up by a fan through ducts and into a silica-gel dehumidifier which removes most of the moisture. The latent heat of vaporization heats the air. This heat is removed by passing the air through a small water cooler from which it passes into a spray chamber where water is evaporated to cool the air to the desired temperature. The air is only partially saturated in the evaporator so that, after it is mixed with the portion of return air not treated, the final humidity will be at the correct point. The entire air stream is then forced through the filter and ducts to the room.

This system has the advantage that the same apparatus is used the year round, with the exception that a dehumidifier is used in the summer and a furnace is used in the winter. The evaporative cooler, which is simply an air washer, is used as a humidifier in the winter.

A large residence in which such a system was installed a year or so ago was cooled at an average cost of 16 cents per hour. If the cost of water is high, a small cooling tower can be used to supply the small after cooler.

THE  
ARCHITECTURAL  
FORUM  
▼  
**BUILDING MONEY**

A monthly section devoted to reporting  
the news and activities of building finance,  
real estate, management and construction

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JOHN CUSHMAN FISTERE  
*Editor*

# A PHENOMENON OF EXPLOITATION

**Booed, ridiculed, picketed and sued, Rockefeller Center is reported out of the red; maybe it is and maybe it isn't; Todd, Robertson and Todd.**

FOR nearly a year New Yorkers laughed loud and long over a skit that embellished "As Thousands Cheer," smartest of all 1933-34 Broadway revues, wherein John D. Rockefeller, Jr., played what seemed to the audience a colossal joke on his aged parent. The joke: as a birthday gift son John presented father John with Rockefeller Center.

But last summer producer Max Gordon decided to drop that bit from his show because, it appeared, the jibe had lost its point. Rockefeller Center, so the New York papers headlined, was out of the red.\*

The building industry was less inclined than the public, however, to accept the statement as meaning all that it appeared to mean. Brokers did not doubt that by some methods of calculating Rockefeller Center was 80 per cent rented, but they believed that by convenient bookkeeping only could it be proved that the development was actually making money. Strictly speaking, Rockefeller Center did not say it was; but it did say that its six existing buildings "were as a whole on a self-supporting basis."

But whether its figures were red or black, it was nonetheless true that Mr. Rockefeller was optimistic enough about his prospects to go ahead with a new three-in-one building. One of the few places in the city

where the hammering of riveters may be heard is on the northernmost boundary of Rockefeller Center, where soon will rise two six-story units of International Row and behind them a 38-story tower of unknown occupancy. And not even those intrepid twenty-niners, the real estate operators of the pre-crash era, would be hardy enough to add nearly a million more square feet of space to be rented if there were not good

rental progress could never have been made if American business were suffering from any fundamental malady, as rental activity is a direct barometer of existing and expected business conditions."

But the accuracy of Rockefeller Center as a gauge of general conditions seems doubtful. From birth, Rockefeller Center has been a special case, unrelated apparently to anything but itself. When caution was the order of the day, Rockefeller Center marched boldly forward. It has been subject to abuse of all kinds—artistic, economic, and social. It has been booed, ridiculed, picketed and sued. Its building program has been unorthodox, its promotional methods unprecedented. Yet when most other buildings are struggling to keep away from receivers' hands, or struggling to get out of them, Rockefeller Center is pronounced out of the red.

**History.** As every one knows, Rockefeller Center was once Radio City, but before that it was to have been a site for the Metropolitan Opera House. The tangled course it followed from what it started out to be to what it has become could scarcely be traced even by those who know most about it. Back in 1928, the directors of the opera corporation decided to move. About the same time Columbia University was looking for a bright idea for its 460,929 sq. ft. of property in the speakeasy belt from 49th to 51st Street between 5th and 6th Avenues. In neither the Metropolitan nor Columbia did Mr. Rockefeller have any particular interest, but he seemed to be the only man to whom John L. Tonnele, a youthful vice



Lohse

## No Longer "Thousands Cheer"

reason to believe that the existing space was already off, or soon would be off the market.

In making the announcement of the project's condition, renting boss Hugh Sterling Robertson extended his remarks long enough to comment, "Such gratifying



Son Nelson and Worker



John D. Jr. and Nobleman



Son John and Worker

president of William A. White & Sons, brokers, could go with his dream.

The dream was to acquire all the property in the three blocks, including what Columbia did not own, and make of it an Opera Square that would outstrip anything on the continent. Though Mr. Rockefeller's philanthropies need no apologies, he is also interested in what has been called "philanthropy at 6 per cent." His model housing developments are an example. And so while he was intrigued with the gigantic scheme, he tended toward the notion that the project would have to pay for itself.

It was against this barrier that the opera's hopes, if they had any, were dashed. Ten of the greatest architects in town were invited to submit schemes for the great opera city, but when Mr. Rockefeller and his corps of experts came to examine the plans, it was found they all had the same fault. The opera house was given all the prominent and most rentable space so that Mr. Rockefeller's return would in all probability have been an empty bag.

About the same time, the radio industry, represented by the Radio Corporation of America and its affiliates, was looking for a spot in the hub of things where it could set itself up in a manner becoming its growing importance. One of its affiliates happened to be the Radio-Keith-Orpheum Corporation (RKO), which was badly in need of some theaters. Since they, at the time, were able to pay their own way without any help from Mr. Rockefeller, the Opera House was pushed over into a side street to make room for radio and the movies.

And so with as able an assemblage of architectural, engineering, real estate and management talent as could be assembled, Rockefeller Center evolved.

**Set-up.** The physical growth of Rockefeller Center has been told in *THE ARCHITECTURAL FORUM* in a series of articles beginning January, 1932. Of its financing and operation, little or nothing has been said, either in the *FORUM* or out of it. And yet to the building industry, there lies in it as

much to stimulate the imagination as in its massive proportions, its intricate mechanical equipment, its scattered and heterogeneous collection of contemporary art.

When first its sponsors talked about their giant, it was generally referred to as a \$250,000,000 project. But that was before the ears of tax assessors were tuned to catch any hints of fat values. Today, most frequently heard figure is \$125,000,000, which, as it happens, is nearer the truth. A rough estimate of the cost might be broken down as follows:

Land.....	\$30,000,000
RCA Building.....	45,000,000
RKO Building and Music Hall.....	8,000,000
British Building.....	1,500,000
French Building.....	1,500,000
Center Theater (old RKO Roxy).....	4,000,000
Building under construction.....	15,000,000
Street and subterranean development.....	5,000,000
Total.....	\$110,000,000

To these can be added another \$10,000,000 for the opera house when it is built, \$12,000,000 for another 38-story office building when it is built, and another \$3,000,000 for a contemplated 9-story building. The total is \$135,000,000.

Cost of the land is not, however, to be strictly included in the cost of the project, for of the 513,424 sq. ft. total, Rockefeller owns only 41,583 sq. ft. Besides Columbia's 460,929 sq. ft., which is leased for 21 years, with two more 21-year options, 10,912 sq. ft. is leased from a dozen or more other owners. For its share, Columbia is said to receive about \$3,000,000 annually. The total paid out for other leased space is probably well under \$100,000.

Based on figures for buildings of comparable type, the cost of operation is probably about 45 cents a square foot, or approximately \$1,200,000 a year. Taxes are approximately \$1,800,000. Besides there is interest of 5 per cent a year on the \$65,000,000 mortgage held by the Metropolitan Life Insurance Company.

Thus a table of total charges against

the property would read something like this:

Rent.....	\$3,100,000
Operating costs.....	1,200,000
Taxes.....	1,800,000
Interest.....	325,000
Total.....	\$6,425,000

How near the rental income figure comes to meeting these charges can only be guessed at, but a better guess can be made after a few observations on what "80 per cent rented" actually means. One reason for believing the figure is actually not so good as it sounds is that exclusive of private street and plaza areas, there is a total available space for building of 403,142 sq. ft. Of this, 113,029 sq. ft. are as yet untouched; and on 54,035 sq. ft., the three-in-one building is now under construction. Thus, approximately two-fifths of the usable space is not bringing any return at all, except for a temporary parking space on a small portion of the south block.

Reason No. 2 is that Mr. Rockefeller at the time the Federal Trade Commission ordered the Radio Corporation of America to reorganize itself was forced to accept 100,000 shares of RKO stock in return for cutting down the \$624,000 annual rent which RKO was supposed to have paid on the two theaters. How much of a reduction Mr. Rockefeller accepted can also only be guessed at, but it is probable that the figure is now much nearer 300 than 600 thousand.

Omitting the two theater buildings as being special cases, the remainder of the built space is rented as follows:

BUILDING	RENTABLE AREA	PER CENT RENTED	
		RENTED	RENTED
RCA.....	1,880,000	80	
RKO.....	307,000	55	
British Empire.....	70,000	81	
French.....	70,000	60	
Shopping Plaza.....	10,000	100	

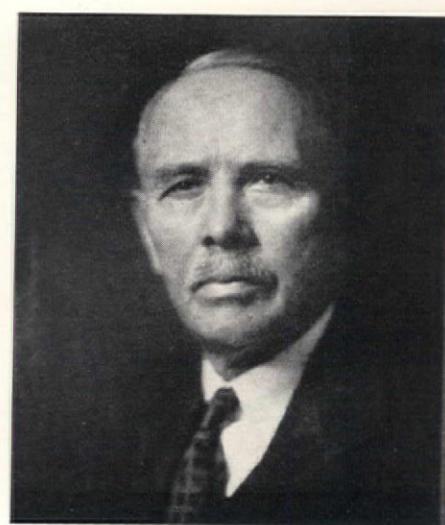
Footing up the totals, the total space available is 2,337,000 sq. ft. of which only



John R. Todd



Hugh Robertson



Dr. James M. Todd

# ROCKEFELLER CENTER gmnhabited

An average of 1,300 daily pay 40 cents to view New York from here

Next month "The Stratosphere," New York's newest, highest, swankiest night club, under Rockefeller Center management, opens on the 65th and 66th floors.

Here Rockefeller Center, Inc. operates a kitchen, leases private dining rooms to such tenants as Standard Oil, R.C.A., American Cyanamid.

*Sanctum--John D. Rockefeller Jr. 56th floor. S.W. corner*  
*on this space Mr. Rockefeller pays himself rent*  
*The Rockefeller Foundation*

Arts acres--a haven (until rented) for a favorite Rockefeller philanthropy--  
hery- the renting office and publicity -

Here is housed Standard Oils No. 1 competitor, Shell Eastern Consolidated Coal—one of the two companies, Rockefeller Jr. owns outright. The other, Rockefeller Center, Inc.

Two years of bickering and dickerling finally landed the tenant for these floors, Standard Oil of New Jersey, in which John D. Jr. has the biggest stock interest, 11 percent.

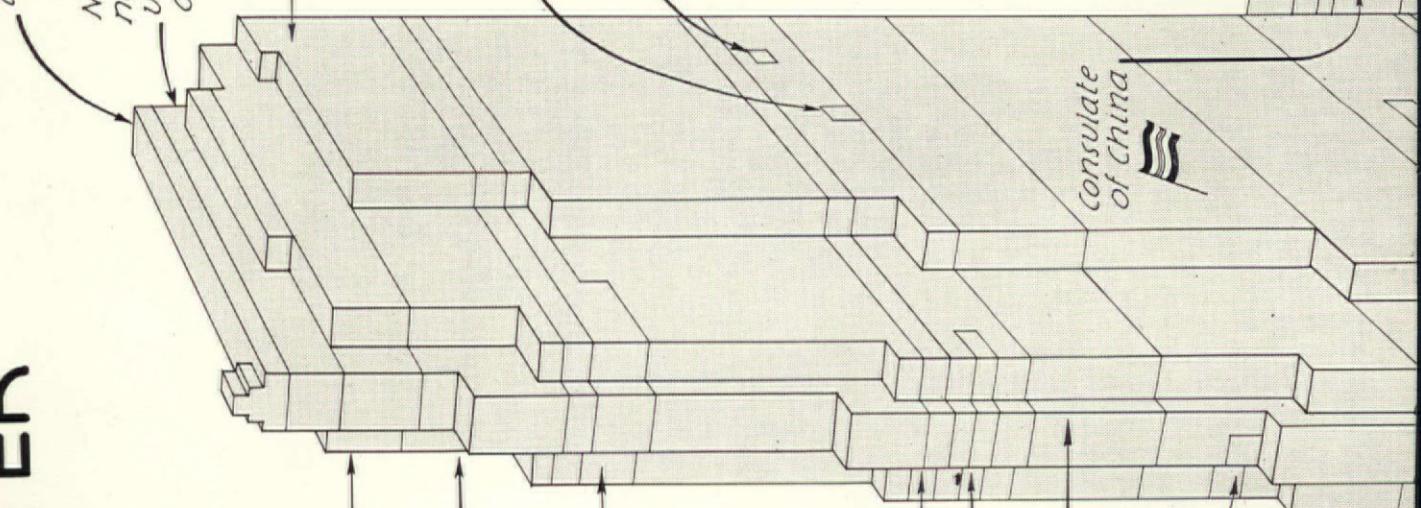
Once the RKO Roxy Theatre, now called the Center, after the original Roxy Theatre won a suit to retain the once valuable name

To brewer Jacob Ruppert, Rockefeller Center will pay rent until 1937 for the privilege of having removed this tenant from the Ruppert Building. American Cyanamid Co. Four floors.

Here the office of special work, Inc. Neison Rockefellers private company whose business defies description.

Here the year's most celebrated bridegroom, John Jacob Astor sits, snubbing half brother Vincent's rental offerings. When this 3/4 acre roof is landscaped it will with appropriate assistance from publicist Merle Cowell be dedicated as "Gardens of the Nations."

Because it takes up 3 floors and two theaters, Radio-Keith-Orpheum had this building named for it.



Reserved for construction  
some time before 1940--  
a 45-story office building

Where cars are now parked  
row on row may some day  
rise the *raison d'être* of  
"all the shootin' -- a new opera house".  
The Centers Center, the sunken Plaza,  
from which buyers enter the acres  
of underground shops.  
Here a branch of Chase National Bank  
whose president Winthrop Aldrich is  
Rockefeller's brother in law, is also a  
center director.

Consulate  
of Greece

Within these doors,  
straight ahead is  
Rivera's famed  
mural-less wall

On this roof,  
the Music Hall's "Rockefeller" scamp.  
er at tennis, and shuffleboard, pro-  
viding  
the tenant's appeal &  
distraction

when it was Roxy's Center, the abdicated  
impressario was pent up here.

PEDAC: 12,000 square feet of rugs, furniture, drapes, etc. in a  
permanent Exhibition of Decorative Arts and Crafts.

Biggest of all office space users: N.B.C. Here the offices of  
Merlin H. Aylesworth and lesser lights; behind the window,  
less walls towards Sixth Avenue, are its studios.

Here Paul Manship's gilded Prometheus, besplattered with  
torrents of water, sets visitors to puzzling what it means.  
Most frequent guess, a male escaping from his marriage ties.

Where famed French  
restaurateur Henri  
charpentier dishes up  
escargots for the knowing

Patiently waiting for an  
overflow, the *aoelet* Blaig.,  
completed 1930, 90% vacant.  
Famed Parisian Couturier,  
Le Long's New York studio

Consulate of France

Congress conveniently passed a special  
Act, permitting, for International Row's  
convenience, a customs-free bonded  
warehouse, extending under the R.C.A.,  
British and French Building.

Twin spires of Rome-- St. Patrick's Cathedral

In return for many favors,  
Mr. Rockefeller gave this street  
to the city, which, in turn,  
graciously dubbed it  
Rockefeller Plaza.

To protect its small, smart shops  
Rockefeller Center turned thumbs  
down when John Wanamaker's  
sought space in this its latest unit.  
Half up, the building is still unnamed.

International Row--buildings for France, Great Britain, Italy and probably the U.S.S.R.

1,781,550, or 76 per cent, is rented. In other words, if all the tenants were housed in the big RCA Building, it would not be quite full.

Other facts influencing the actual if not the theoretical solvency of Rockefeller Center are that in a few instances, Mr. Rockefeller may be considered to be paying himself rent, as in the case of the Rockefeller Foundation, which occupies a whole floor and a little bit over. The General Health Council, another Rockefeller philanthropy, takes up another floor. A further deduction from the impressive figure is that two big tenants are only temporary — one a CWA group and the other PWA.

But even putting the best possible interpretation on the figures, there was a still more important possible influence on total income. It is the prime reason why New York real estate men reach for the salt when they hear that Rockefeller Center is out of the red.

Last June the Anahma Realty Company, owned by August Heckscher, himself a philanthropist of no meager givings, filed a suit against Rockefeller Center, Inc., in which he charged openly many things which brokers had been saying to themselves for a long time: that those in charge of renting the space were cutting prices way under competitive buildings, that they had assumed leases at great sacrifices to themselves, and at considerable damage to the landlords who lost their tenants.

What brought on the Heckscher suit in particular was the loss of Universal Pictures as a tenant. Mr. Heckscher could find no reason for it other than an unfair cut in price on the part of the RKO Building's renters. No building likes to make public its actual rental figures, but Rockefeller Center has taken more than usual pains to keep the public from knowing. On file at the Hall of Records, where normally all important leases would be filed, are only two leases, both for shops, and both of these are on percentage bases. The printed list of rates distributed to brokers has been juked in favor of a policy "to find the proper space for the tenant at the proper price."

Two big leases Rockefeller Center is known to have assumed: one for the American Cyanamid Corporation, which moved out of 14 floors of Col. Jacob Ruppert's (beer & Yankees) building on the corner of 45th Street and Fifth Avenue into four floors in the RCA Building. American Cyanamid's lease had until 1937 to run.

For the Shell Union Oil Company, which was scattered over five different buildings in different parts of the city, the operators made a deal taking over all the leases some with as many as four years to run, and concentrated the entire company in two floors in the RCA Building.

How much more lease assuming was done, if any, is not known. But even those two important contracts are certain to pull down the current earnings of the corporation.

In both cases, Todd, Robertson & Todd

turned over the sub-leasing of the vacated space to the renting agents for the buildings affected, so that owners would not have the old space competing with other space in the building.

A consensus of midtown renting experts places an average of between \$2 to \$2.25 per square foot on all the office space. At the lower figure, the rental income would be about \$3,500,000, and at \$2.25, it would be about \$4,000,000. From concessions another \$100,000 can be added to the income, and \$300,000 is a reasonable guess for the yearly rental of the two theaters.

Thus, with a probable income between \$3,900,000 and \$4,400,000, and total charges approximating \$6,425,000, the net annual loss lies somewhere between \$2,025,000 and \$2,525,000.

But such a showing, far from being a cause of embarrassment to either Mr. Rockefeller or the two Todds and Robertson, should be a source of pride. Its principal rival wishes it were doing as well.

**Todd, Robertson & Todd.** From the day Mr. Rockefeller decided that none of the schemes first submitted by the architects was what he wanted, Rockefeller Center has been securely in the hands of — Todd, Robertson & Todd. True, there have been cooperative brains aplenty, experts of all kinds, but when the credit or blame for the development is being parceled out, the major share must go to the two Todds and Hugh Robertson.

The Todds, John R. and James M., are brothers. Sons of a Wisconsin Presbyterian minister, one started life as a lawyer, the other as a surgeon, and both quit their professional practice early but separately to enter the construction business. They joined forces about 15 years ago. John R. is the first Todd in the firm name, and the first Todd in its affairs. He is of stern but simple stuff, a promoter with none of the typical promoter's front, a builder with none of the mud on his shoes.

Brother James M., invariably known as Dr. Todd, is most at home in construction minutiae, which has been his forte for almost forty years. Perhaps his scientific training is responsible for his painstaking carefulness, a characteristic which led one of his associates to say facetiously, in explaining what each of the executives did on Rockefeller Center, that Dr. Todd was "head of the obstruction department."

With his two partners, Hugh Robertson has one thing in common. His father was also a Presbyterian minister. Born in 1880 he started life as a railroadman with the New York Central, first as an accountant, later as head of its construction department.

There is probably no other firm just like Todd, Robertson & Todd anywhere. Its services run the gamut of building, from promotion to management, including architecture, engineering and construction. Though they frequently work with architects or with general contractors, there is never any doubt about who is running the

job. It is always the two Todds and Robertson.

As builders they had qualified with Mr. Rockefeller in the handling of the Williamsburg, Va., restoration; but there was something else that led him to entrust them with the building of his commercial colossus. In John R. Todd and Dr. Todd he found men of his own kind, quiet, conservative, with the same sense of social responsibility that marks Rockefeller doings. John R., for instance, was once a missionary professor at the University of Beirut in Syria, and Dr. Todd is a heavy giver to his alma mater, Beloit College. Besides, the Rockefeller associates liked Hugh Robertson. He was their kind of man. Trained in the intricate business of the New York Central, he was a wise deal-maker, level-headed, not easily rushed off his feet.

**Promotion.** To find the reasons why Rockefeller Center is so well-tenanted, one must look behind the record into the smooth working of the promotion and publicity departments with the renting department.

Handicapped by a location considered inaccessible in New York, but which would be called "right handy" in most cities, Rockefeller Center has been forced to create its own traffic. Since November, 1933, there has not been a day when there was not some attraction taking up otherwise unoccupied space. Most of them have been exhibitions, ranging in character from the National Hobby Show which drew 80,000 during its six-day stay to a display of the original manuscript of Southland's beloved "Dixie." Other traffic-builders have been a stamp exhibition, a show of illegal slot machines, a soap sculpture exhibition, a municipal art show, fashion and flower shows, band concerts and automobile shows.

Plus these, Rockefeller Center has several permanent attractions, not the least of which are the National Broadcasting Company studios and the terraced roof garden. Besides, the two motion picture theaters draw an average of 23,000 a day. Altogether, the non-working visitors to all the buildings averages 50,000 a day. The influence of this built-up traffic is evident in the fact that of all the shops in the Center, most of which are on percentage leases with minimum guarantees, not one has failed to pay higher than the guarantee in the lease calls for.

**Publicity.** Doings at the Center have been coupled with a heavy barrage of publicity. Up to the middle of last month the total number of releases was 557, and the clippings have filled not one but 67 scrap books. No ordinary run-of-the-mill press agent has been responsible for the columns and columns of space that have made the country, and to some degree, the world conscious of Rockefeller Center. Instead they retained at what was probably a very substantial figure *American Magazine* ex-editor Merle Crowell to do the job. Unexperienced in publicity, Crowell has not been content with the usual stunts of having



*Events make news; news brings publicity, and publicity sometimes brings tenants. Here a scattered group of happenings that helped fill the buildings. Ex-premier Herriot dedicates the French Building while Colonel Woods listens and Nicholas Murray Butler seems to slumber; the Center's baseball team; architect Roger Bullard receives a medal to open the Better Homes show; Nelson Rockefeller and Mayor LaGuardia grace the Municipal art show opening; and Ely Culbertson is sketched.*

visiting bicycle riders balance themselves on the parapets, or of having dancing teams illustrate the latest steps on the roof. He has gone after bigger game. Ambassadors, mayors, big-wigs of all kinds have been persuaded to use Rockefeller Center as a sounding board, always in the interests of a noble cause, but always furnishing publicist Crowell with a peg to hang a story on.

The Rockefeller family reticent about using the name to promote its business, has only rarely lent itself to bolster a routine happening at the Center into a news event. Most active of all the Rockefellers has been son Nelson, who is usually drafted, against his will, to give awards to deserving craftsmen and be present at important show openings, has, through his slightly mysterious company, Special Work, Inc., played an important part in the renting.

How effective publicity has been as a renting aid can be surmised from the fact that 15 per cent of the tenants virtually

walked into the renting office and signed leases.

**Renting.** The actual renting of space has been in the hands of a small town North Carolina lawyer, Lawrence Kirkland, who before he was hired by Hugh Robertson was only legally familiar with a percentage lease. It was no accident that Hugh Robertson chose an inexperienced man, for on past buildings he has invariably followed the same practice. Two of his ex-renters are Bernard Wakefield, whose success with the Cunard Building enabled him to open what is now one of the biggest brokerage offices in town, and L. Andrew Reinhard, who became managing agent for the Chrysler Building after filling up Robertson's Graybar, and then became one of the architects for Rockefeller Center.

In the rounding up of tenants, Robertson has used not a line of paid advertising in newspapers or magazines, but has depended on swank brochures and personal contact. His staff of renters is composed of eleven



#### Cause and Effect

*Out of the scattered happenings streams the steady flow of newspaper notices that have made Rockefeller Center the most talked of rentable space in the world. Colonel Woods signs the Center's biggest lease with RCA and NBC officials.*

comparatively young men, only two of whom had ever talked anyone into signing a lease before.

The filling up of the buildings has not been as lush a plum to outside brokers as one might think. On only 20 per cent of the space have brokerage commissions been paid, a circumstance which may be due to what some brokers think is an uncordial attitude towards them on the part of Robertson and Kirkland.

Because oil men follow oil men, and radio people clique together, the renting strategy has been to pull into the building one leading tenant in as many fields as possible. In effect, the group of buildings is a number of centers within a center — some of which prominent enough to be noticeable are oil, radio, motion pictures, decorative arts, health, aviation, and firms with international connections.

Smartest of all Rockefeller Center renting schemes has been the lining up of three foreign countries to lend their official blessing to buildings named for them. So adroit has been the publicity on the British, French and Italian buildings (with dedication speeches about international good will, etc.) that the public could very easily believe that the British Empire Building is a valuable outpost of George V, and that the Maison Francaise and the Palazzo d'Italia were official embassies of trade. As a matter of fact, the participation of

those governments in the buildings is really very small, but very important.

**Rockefellers.** To an inquisitive visitor, who asked what Mr. Rockefeller was most interested in — was it the design, the construction, the art? — one of the officials answered, "Return on his money."

Said in jest, it was true with reservations. It was true insofar as Mr. Rockefeller was interested in its paying its own way as a principle, not in the comparatively slim increase it might bring to his millions. His real interest, however, was in watching its evolution from the first rough sketches to the pile of steel, stone and glass it has become. In the office of John R. Todd he often squatted on the floor examining samples, following explanations of the blueprints. He attended few meetings, but at those his "yeas" and "nays" were final.

Son Nelson came into the picture after the construction was well along. Much more easy to get along with than his father, he interested himself in the renting of space. Through his Special Work, Inc., he has added his active mind and influence to more than one renting problem. Though he looks like his father, his associates think they detect in him more of the grandfather's business sagacity.

Son John D. III is more like his father, and at 27 is already well aware of the responsibilities which sons of rich men have toward society. His field is industrial rela-

tions, a field he has some opportunity to explore in connection with Rockefeller Center, where strikes have been frequent though not serious.

Besides the three Rockefellers, there have been other Rockefeller men active in the affairs of the corporation — Col. Arthur Woods, an articulate, rotogravurish figure on all public occasions, once its president and now on sick leave; brother-in-law Winthrop Aldrich, Chase National Bank's president, a frequent consultant on financing; and Charles O. Heydt, who is the permanent real estate man in the Rockefeller cabinet.

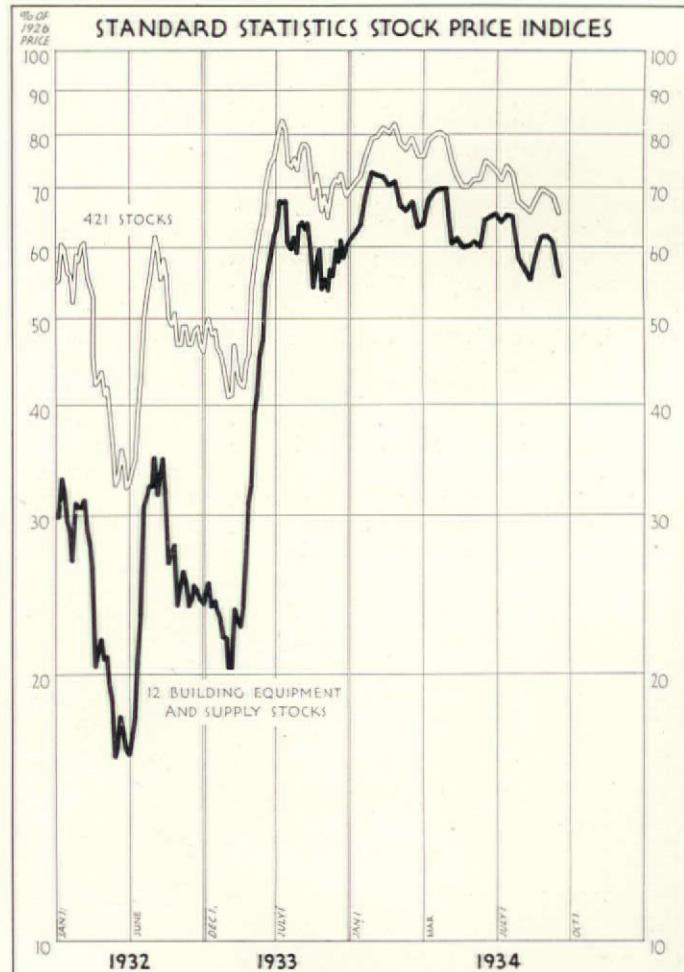
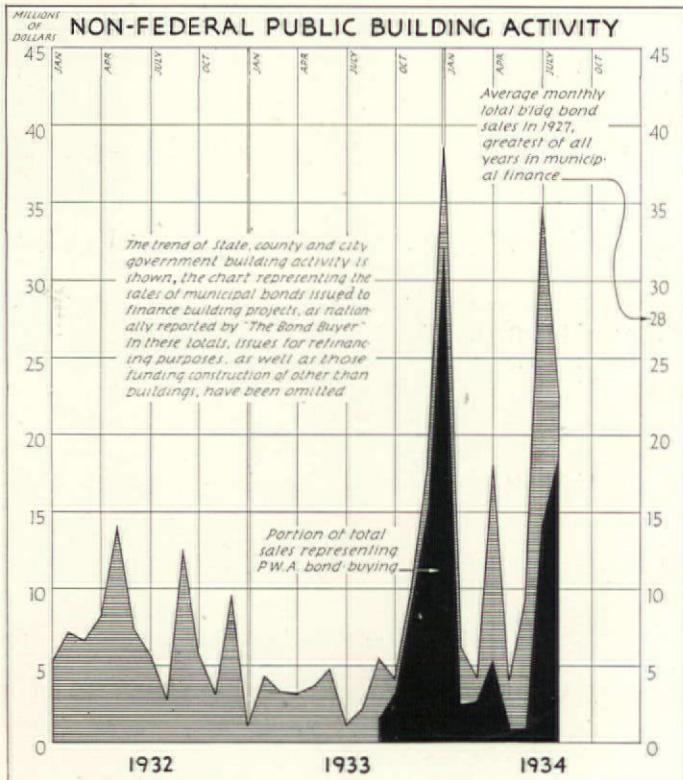
**Monument.** Though it may or may not be a profit making company at the moment, the success of Rockefeller Center seems definitely assured. From start to as near the finish as it is, it has been a phenomenon, a phenomenon of many kinds — conception, engineering, and promotion. Whatever its shortcomings may be from the standpoint of city planning or any of the other things its critics hold against it, it is an inspiring spectacle to New Yorkers and a respectable monument to Mr. Rockefeller.

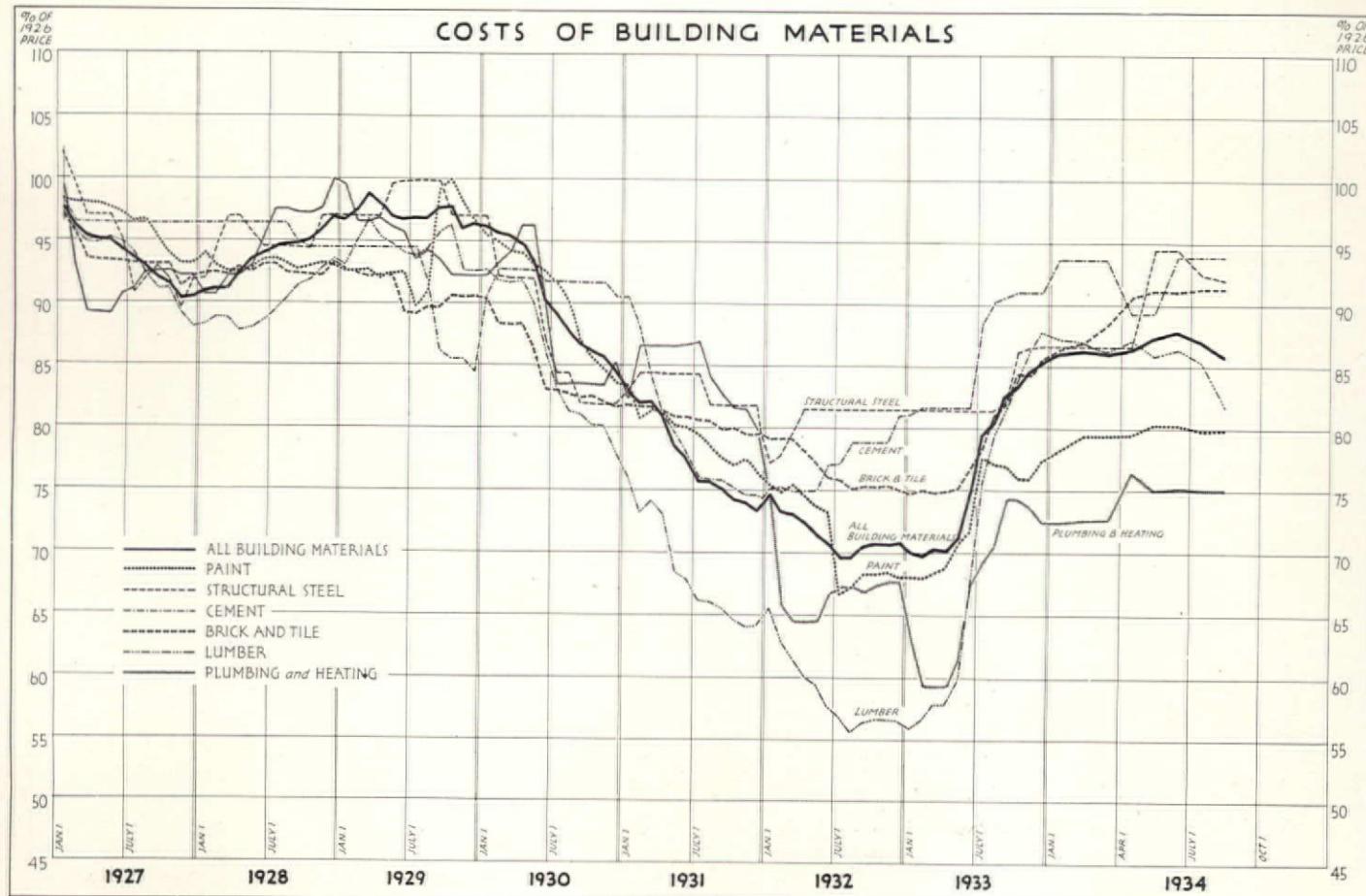
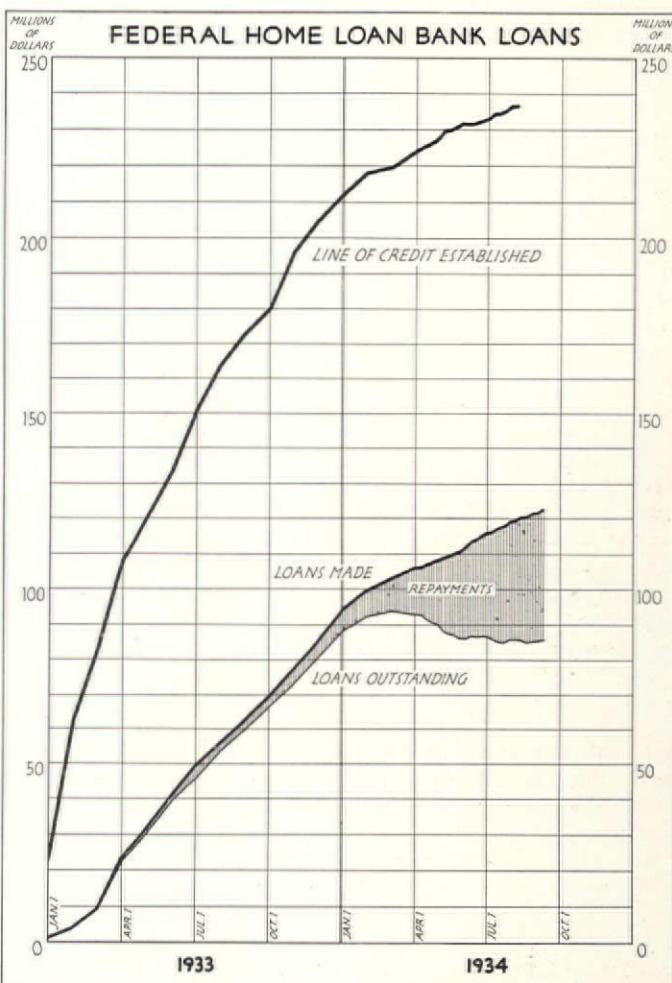
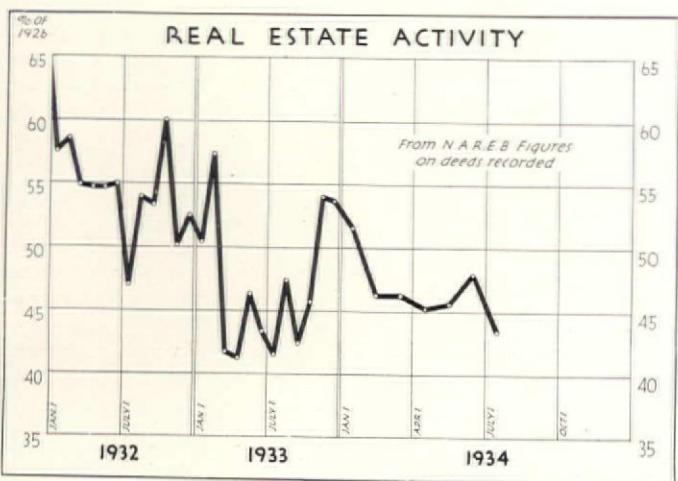
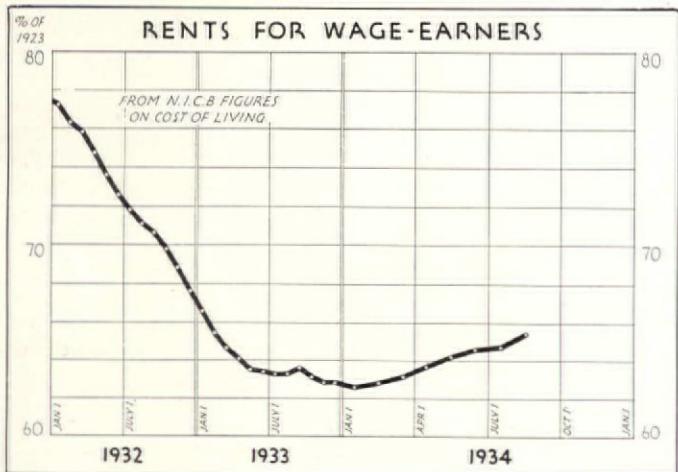
Not so many years ago John D. Rockefeller, Jr., with more wistfulness than one might expect, said to a builder whose towers were scattered from the Battery to Central Park, "I envy you."

Perhaps that was really what started Rockefeller Center.

## LUMBER'S MAGNANIMITY

in cutting prices for the FHA pulls the cost curve down. Rents sniff at October.





# MOFFETT'S NEW RULING

## widens FHA loan insurance; the industry gets the needle; gross factor charge.

THERE were three opinions abroad last month about the Federal Housing Administration. Some said it was a failure, others that fondest hopes had been surpassed, others that it was too early to tell. The truth seemed to lie somewhere between the second and third. Certainly there were no broad indications to point definitely toward success or definitely toward failure; but early returns were regarded in Washington with genuine enthusiasm.

Specific developments last month included:

¶ Filing of an estimated 2,000 loans averaging \$400 with the Administration up to September 15.\*

¶ Qualification of 6,231 financial institutions with resources of \$31,096,483,039.

¶ Launching of local campaigns in 1,006 cities.

¶ A drop averaging 7 per cent in overhead sales and delivery cost on less-than-carload shipments of builders' supply materials authorized through an NRA order.

¶ Appointment of 60 liaison officers of the U. S. Building & Loan League to bring b. & l. support into full play behind the Housing Administration. A similar group of commercial bankers was appointed in August.

**Modification.** Most significant of all FHA developments last month was the amendment of its rule requiring remodeling loans to be made only to owners whose mortgage and interest payments were not in arrears. Flooded with protests that such a ruling immediately eliminated the bulk of those whom the program could aid, Administrator Moffett re-ruled:

"Hereinafter it is *not a requirement* that 'the property to be improved must not have against it delinquent taxes or assessments,' and Regulation No. 9 is so amended. Therefore, financial institutions may use their own judgment as to whether or not credit should be extended, regardless of the taxes or assessments. Although the information regarding these items continues to be important on the Property Owners Credit Statement, the nature of the information will not affect the insurability of a note."

Regarding mortgages, Administrator Moffett re-ruled:

"While the regulation provides that the mortgage must be in good standing (which means that there exists no present right in the mortgagor to foreclose) the Federal Housing Administration will not adhere to this rule in cases where the note is not taken by the financial institution holding the mortgage. A financial institution which does not hold or have any interest in a mortgage

on property being altered, repaired, or improved, is in a position to judge for itself whether the conditions are such as to justify an assumption that the foreclosure is likely before the loan matures."

By these two rulings, it was thought the FHA had cleared the way for doubling the amount of persons who would borrow under the plan. At the same time it was again emphasized by the administration that no part of a modernization loan could be used to pay taxes or for any other purpose than actual property improvement.\*

**Eligibility.** Likewise last month the administration made clear exactly what items were and were not eligible for loans. The list of banned items includes: *furniture, unless built-in, floor and other lamps, showcases, unless built-in, desks, radios, unless built-in, porch swings, electric fans, unless built-in, toasters, washing machines, electric and gas irons, ranges and stoves — gas, coal or wood — unless built-in, food mixing machines, vacuum and other types of cleaners, unless built-in, individual detachable gas and electric heaters, single unit air conditioners, unless built-in.*

**Income.** One other regulation that puzzled many a borrower and many a lender was the one requiring the property owner to have an annual income at least five times larger than the amount of the loan. A Moffett radio explanation cleared up the puzzle.

"A friend of mine tried to tell me the other day that, under our plan, a man would have to have a yearly income of \$10,000 to borrow \$2,000 for repairs on his home. But he was greatly mistaken. Our rule is that the borrower shall discharge his debt by repaying each year at the rate of not less than one-fifth his annual income. Consequently a man with \$2,000 income per year can borrow \$2,000 by agreeing to pay it back in five years, \$400 each year in monthly payments."

**Gross Factor Charge.** Until they received the Administration's table of "gross charge factors," not a few experienced bankers, to say nothing of architects and contractors who were trying to aid clients, were at a loss to know exactly how much the total face value of a note should be to cover a specific amount of repair. The Administration eased their minds by the following table. To find the face value of the note, multiply the amount of money required for the work by the gross charge factor opposite the length of time the note is to run, and add the result to the amount of money required. For instance if the work to be done costs \$950, and the loan is to run for 36 months, it would be necessary to add \$142.31

(\$950 x .149798) to the \$950 to obtain the full face value: \$1,092.31.

Gross Charge Factor (Based on \$1 of Proceeds)	Number of Monthly Installment Payments in which loan is to be repaid
.052632	12
.056680	13
.060729	14
.064778	15
.068826	16
.072875	17
.076924	18
.080971	19
.085020	20
.089068	21
.093117	22
.097166	23
.101215	24
.105263	25
.109312	26
.113360	27
.117408	28
.121457	29
.125506	30
.129554	31
.133603	32
.137651	33
.141700	34
.145748	35
.149798	36

**Reticent Industry.** First it was the banks that worried the housing Administration. Now it is the industry itself. Despite repeated assertions from Washington that the major burden of promotion will be left to the building industry nationally and locally, manufacturers for the most part have been slow to supplement Washington publicity with their own efforts. Many have adopted a policy of waiting to see what develops.

Last month to get quicker and broader action from the industry, the Administrator invited manufacturers and their advertising agencies to come to Washington in groups to explain to them how they could profit if they would from the Better Housing Program. Administration officials spent days in succession explaining the provisions of the act, suggesting promotion methods, trying to instill enthusiasm in the doubters. First Moffett, then Deputy Administrator Albert L. Deane, then promotion director Ward M. Canaday, and finally field director W. D. Flanders directed round table discussions.

To stimulate architects, contractors, bankers, civic leaders, regional and State directors were supplied last month with four different pictorial presentations of the housing program's possibilities. Also available were special instructive bulletins for each group.

**New Construction.** While news was forthcoming daily of the progress of the remodeling and repair part of the National Housing Act, there was still a great silence on the sections dealing with new residential construction. Apparently, the obstacle to be overcome was the naming of a suitable Deputy Administrator. It was reported that Moffett was seeking a nationally appreciated New York banker, but that all those he had asked had found private business too pressing to accept. Moffett was said to be contemplating asking President Roosevelt to draft a man.

January 1 was still regarded as the earliest date that rules and regulations for new residential loans would be available.

\* Much lower than actual loans made since banks do not file them immediately with the FHA.

\* Most frequent inquiry: "Can a property owner use part of his loan to pay taxes?" The answer: NO.

## REFUGE FOR RADBURN

and more money for its dream is sought by house Bing.

In 1924 a veteran Manhattan real estate man, Bing & Bing's Alexander Mason Bing, emerged from retirement to rustle capital for the City Housing Corp. from among the housing minded. Having made a fortune from housing the rich on Park Avenue, he turned his attention to housing the poor and near-poor. For City Housing Corp. was to be no ordinary development company. Organized under the State's new housing act it was a limited dividend corporation, pledged to build not only better homes but whole communities.

Thus it was that Mr. Bing had no trouble in getting \$3,000,000 in stock subscriptions from many who were less interested in the 6 per cent than they were in social betterment dividends: John D. Rockefeller, Jr., Mrs. James Roosevelt and her daughter-in-law, Mrs. Franklin D. Roosevelt, Ogden L. Mills, Arthur Lehman, banker-brother of New York's present Governor, Miss Anne Morgan, and others.

In 1925 City Housing built Sunnyside, just over the Queensborough Bridge on Long Island, and into Sunnyside's 70 gardened acres flocked 1,200 families.

In 1928 City Housing put down the nucleus of Radburn, N. J., a 1,250-acre ambition that was eventually to house 50,000 people. In its first year, 300 families moved to Radburn, and became goldfish families for thousands who visit the town yearly to see the widely heralded "town for the motor age."

Financed by the best money, Sunnyside and Radburn were planned by the best people: Henry Wright, Clarence Stein, Frederick L. Ackerman, Robert D. Kohn, and city planners Thomas Adams and Sir Raymond Unwin. But rich backers and wise planning failed to counterbalance the blows that befell good and bad developments alike during the depression.

The year 1929 was the last in which dividends were paid out of earnings. In 1930, net income was \$6,048.16, and dividends were paid out of surplus, cutting it down to \$179,981.19. The following year a loss of \$284,296 wiped away the surplus and left a deficit of \$103,864.81, which has grown steadily since. Its June 30 deficit was \$1,068,365.

So month before last president Bing, doubtful whether City Housing would be able for many years to put itself back on its feet without help, decided to do what scores of other corporations have done: seek refuge under section 77b of the new Bankruptcy Act.

Said Mr. Bing: "Increasingly adverse business conditions with the resulting stagnation in real estate have reduced our program to a snail's pace. These conditions

account for the company's present situation and the necessity for a reorganization.

"We are especially hopeful that additional capital will be made available for a more active building program at Radburn which the company is particularly anxious to get under way."

In its petition presented to Federal Judge John M. Woolsey, the corporation's assets were listed at \$11,168,339, its liabilities at \$9,282,105. Sunnyside real estate was valued at \$2,197,631, and Radburn at \$6,108,776.

By the middle of last month the reorganization plan had not been definitely drafted. But Judge Woolsey accepted the corporation's suggestion that the present officers and directors remain in control. The bondholders' committee is represented by civic-minded George W. Alger, who as Moreland

Act Commissioner is now investigating title companies in New York State. Stockholders are represented by Arthur W. Strasser.

It would be a sad blow to housing in America if the ultimate plan for Radburn were not carried through to completion. Regarded by many as the outstanding housing project in the country, its street and garden system has already been widely copied. The feeling of all housing men was expressed by planner Thomas Adams: "There is nothing about which I am more convinced than that the success of Radburn is essential in order to secure the improvement of housing conditions generally in the New York region — as well as the country at large. There is too much at stake, from the public point of view, to permit Radburn to suffer because of anything connected with the present period of depression."

ADVERTISEMENT



## IMPROVED HEATING LOWER COST FOR HUNTINGTON BLDG.

New Webster Moderator Control Sets New Standard of Efficiency and Economy

COAL BILL CUT 31 P. C.

Now Maintain Uniform Temperature at Every Point in Building Says Owner

EARNS 18 P. C. IN 5 MONTHS

Columbus, O.—P. W. Huntington, Manager, Huntington National Bank Building, speaking of the Webster Moderator System recently installed, gives facts that will interest any man who has the job of looking at tenants' comfort over the shoulders of a cost accountant.

"While naturally we were interested in fuel economy, despite the fact that Columbus is in a low-price coal area," says Mr. Huntington, "we were mainly concerned with the even distribution of heat."

The Huntington Building, built in 1924, contains 25,250 square feet of installed radiation. The basement and three lower floors are occupied by the bank.

Under the old system, in order to get the banking section comfortably warm, it was necessary to overheat the upper floors, with the result that these offices were later "cooled off" by window-opening.

Warren Webster & Company was called in to survey the installation. They reported: "If you will change to a Webster Moderator System, you will (1) keep your building evenly heated at all points at all times; and (2), even with coal figured at 3 dollars a ton, you should cut your fuel bill sufficient to pay for the improvement in about 7 years."

"We did not believe they could make any such saving," said Mr. Huntington. "But from their records on other buildings, we were convinced they could solve our problem of overheating. Last summer we placed a contract for a Webster Moderator System, selecting Samuel A. Esswein Company as Modernization Contractors.

"Our new system has given us everything we started out to get—a perfectly even distribution of heat that was maintained unaltered, even through the sub-zero weather of January and February. In the first 5 months it gave us 11 per cent better fuel saving than estimated—a reduction of 31 per cent in coal consumed; a saving of 185.4 tons; a return of 18 per cent on our investment."

"This Webster Moderator Control is an outstanding development," says O. J. Wheeler, president of the Samuel A. Esswein Company, Modernization Contractors. "We are proud of the fact that our company was selected to do the installation."

If you are interested in (1) improved heating service and (2) lower costs to your building, address

# J. C. NICHOLS BUILDS AGAIN

on bedrock worth reckoning with. Scraps of suet helped make his Country Club District sound as well as famous.

FORTY houses under construction. A substantial figure, and an important substantiation, was this report last month from the J. C. Nichols Companies, developers of Kansas City's far-famed Country Club District.

With the expressed conviction that a market exists for "a more complete house, somewhat more compact with smaller dimensions, at considerably less price to meet the present income of buyers," Kansas City's able civic mentor and residential realty baron, Jesse Clyde Nichols, has launched a \$360,000 home building program—his biggest in years, and probably the biggest in progress anywhere in the U. S. today.\*

But back of this lies the tremendous fact that Subdivider Nichols' Country Club District, a product of neither endowment nor legacy, and undoubtedly in general the most spectacular thing of its kind on God's green earth, is still a solvent and going concern.

\*\*\*

*"It isn't my ambition to get all the land out here," said Mr. Nichols this morning; "but after I would get the management of one tract I would have to get the next one to protect that, so there you are."*

In 1909 the Kansas City *Star* began to express what has been time and again expressed about J. C. Nichols. "Where he got his insight into the development of

\* Factors:

"The materials used in these houses were largely bought before the advance a year ago this past July and August. Because of this we have been able to give our buyers the benefit of lower prices."

"Our effort to get the cost down has been somewhat offset by the ever-increasing demand for better equipment and better construction; yet, regardless of this, by careful and intensive planning we have been able to produce considerably more cubic feet of space for the money than we have for the past fifteen years."

"Thirdly, we were appealed to by the need of the time to increase home building in order to hasten recovery, and were anxious to give employment to our large organization which had been faithful to us for so many years."

real estate is somewhat of a mystery," said the *Star*. "Nichols is a young man, not more than 28 or 29. Six years ago he was a student at the University of Kansas. . . . He says it's simply a matter of hustle and watching carefully the growth of the city. However that may be, he became a real estate operator with one and one-half million dollars behind him to spend in the development of 1,000 acres of land in the same time that it would take the average man to reach the position of confidential clerk in a rental agency."

Overlooked was the fact that J. C. Nichols went to Harvard upon his graduation from the University of Kansas. He went there to study law, but after a year at Cambridge he knew he wasn't going to be a lawyer. He had got slightly buggy about land, and Harvard's Dr. O. M. W. Sprague, whose exit from Brain Trust councils made news last year, was responsible. Like Manhattan's diminutive Dr. Richard T. Ely ("Under all, the land") Dr. Sprague can preach the poetry of land economics as few pedagogues can. Clyde Nichols was hypnotized. A thesis on land utilization finished, he put himself square in the wind which Dr. Sprague had said was blowing industry southward and westward, spent a year in southwest Texas with the idea of colonizing large tracts of raw land.

Industry was bursting into the Southwest with a fury, and Kansas City was the capital of the Southwest long after oil gushed in Texas. Kansas City was railroad mighty. Out of these years came far-reaching names for railroads. A stretch it was from Missouri to the Pacific, and Atchison, Topeka and Santa Fe had a meaning all its own. One name of first water was the Kansas City, Mexico and Orient, confidently spoken of as "the Orient."

Great names congregated at the bank, and the great bank of the Southwest was

the Southwest National Bank of Commerce, for which in 1908 Jarvis Hunt designed, and the George A. Fuller Co. built, Kansas City's tallest building. Shortly to become the Commerce Trust Co. through a merger with a small affiliate, the Bank of Commerce had such directors as Theodore



Jesse Clyde Nichols & Art Object

Gary (telephones), R. A. Long (lumber) and H. F. Hall (grain). The new Commerce Trust Co. burgeoned with 55 directors, and in 1911 by ten years the youngest of these was J. C. Nichols of the J. C. Nichols Investment Co., office upstairs.

Kansas City's Country Club District had arrived early at this fount of copious capital largely because back at the University of Kansas young J. C. Nichols had been a hustler. As a student he gained the friendship of Frank G. Crowell of Atchison, a regent of the University and vice-president of the world's largest wheat export firm, the Hall-Baker Grain Co. He did this by writing a dozen letters to alumni each night after school during his senior year, asking support for an appropriation bill for the University then before the State Legislature. But Frank Crowell and H. F. Hall and their friend W. T. Kemper, president of the Commerce Trust Co., were not in the picture at the start.



*Not a part of Kansas City's Country Club District, but a close neighbor, is the new William Rockhill Nelson Gallery of Art, designed by Architects Wight and Wight. A trustee of the Nelson estate, J. C. Nichols has a hand in spending \$600,000 a year to furnish it.*

Wide World

When land-minded Jesse Clyde Nichols came back to Kansas City from Texas it was to greet his acquaintances from a desk in the back of a drug store in Kansas City, Kan., for which he paid five dollars monthly. Having enlisted financial aid from a number of farmers living near Olathe, where his father ran the grange store, and that of W. T. and Frank Reed, attorneys, he was engaged in building and selling 100 workmen's houses. Reed, Nichols and Co. made eight thousand dollars the first year, and ten thousand the next.

This was in 1904 and 1905. In 1907, Reed, Nichols and Co. acquired and began to develop a ten-acre tract just outside the southern city limits of Kansas City, Mo. This was just beyond the rolling, heavily-wooded property of Colonel William Rockhill Nelson, founder of the Kansas City *Star*, which had been developed some years earlier and dubbed Rockhill. In Rockhill's center sat the Nelson mansion, Oak Hall, and roundabout him Editor Nelson built winding roads, sold lots and dabbled in low-cost housing by building long, narrow, two-story houses for the poor, jam-packed together and with windows at the front and back only, to assure privacy. Also nearby were two dairies, a scavenger's hog lot and a large brickyard with a virulent smokestack which Subdivider Nichols had to fight for years through the courts to eliminate.

Besides J. C. Nichols, one John C. Taylor was the only other active member of the firm. At the end of the Rockhill street car line at Forty-eighth Street Nichols and Taylor, driving a horse and buggy, would meet prospective customers. According to the custom of the day, lots were offered without street improvements. A two-foot board walk, largely the handiwork of Nichols and Taylor, sufficed. And the lots sold.

But soot from the brickyard and the evil from the nearby hog lot were omnipresent, and these things constituted a challenge to the young subdivider. Their hard-earned funds soon went to buy up the hog lot and the two adjacent dairies.

Evidencing a keen interest in these doings at his back door, Neighbor Nelson instructed his superintendents to provide the young subdivider use of his road building equipment, made valuable suggestions.

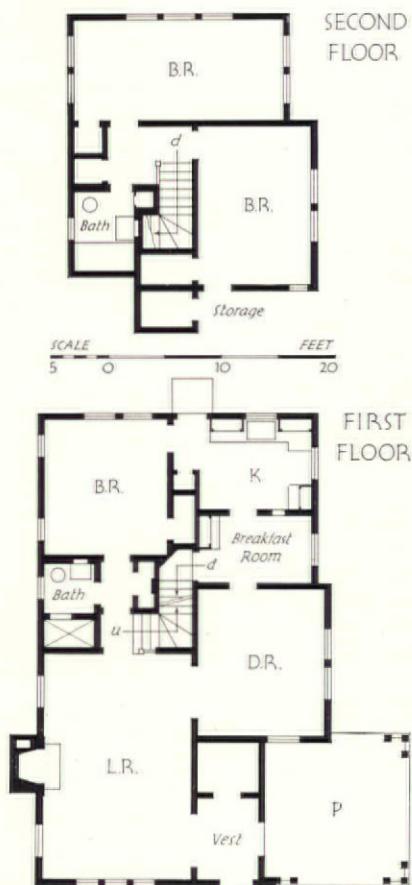


Tyner-Murphy



Tyner-Murphy

### 30,000 Came to See It



and showed appreciation through the columns of his paper.

Hereabouts the County Club District was born. From the start the Nichols subdivisions — first Rockhill Park, then Rockhill Place, and, in succession, Southwood Park, Country Side, Country Side Extension — paid their way. But always there was this business of acquiring surrounding land to protect the land already developed. The good will of the customer had to be retained at all costs, and this was not merely the problem of selling lots. J. C. Nichols was in it for life and he had definitely obligated himself to keep the standard up. To do this, he needed more capital than that he found Lawyers Reed and Reed willing to furnish.

In 1909 he went to Frank Crowell and H. F. Hall with his plans, and found them interested. Syndicates were formed for the purchase of tracts in all directions from the original Rockhill Park. These purchases, and the acquisition of the agency for the development of two properties known as the Yeomans and the Ward Estates, gave the County Club District magnitude.

Hilly and in some sections quite heavily wooded, the Ward property provided a setting for more expensive houses, which the J. C. Nichols Investment Co. was quick to put itself in a position to supply. On the Ward property, atop Sunset Hill, was the Kansas City Country Club, from which the district drew its name. Recognizing the decorative value of a golf course in a residential landscape, the J. C. Nichols Companies later developed four other courses within the District, one for the original club, upon the expiration of its lease with the Ward Estate, two for clubs since formed, and one public course.

With the help of George E. Kessler, an early-day engineer and father of Kansas City's plan, J. C. Nichols saw to it that the District was well laid out. In planning the streets, advantage was taken of natural

*To stir up interest in the houses being built in their Armour Hills properties, the Nichols Companies recently opened this "Little Magic House" to the public. With many a gadget, it was marked \$9,500.*

# Nichols Land

★ New Building

Fieldston sports the country clubs District's first modernistic house (see page 303)

Not controlled... Here hot dog stands, grinning Indians, billboards, dump heaps

Shawnee Mission State Park

Here a Standard Oil station duplicating the design of Shawnee Mission

Fieldston 1926

In the north portion (level country) farmhouse types, 18,000 to \$15,000. In the south section (which is hilly), country types with large lots, \$30,000 to \$35,000



Kansas City Country Club

Mission Hills 1914

Intimacy with nature has been achieved in parts of Mission Hills to an even greater extent than in Sunset Hill. The houses here lie low, are generally English in feeling.

Johnson County  
KANSAS

The District's most costly home, the \$350,000 farm house, built by the Nichols organization

Indian Hills 1926  
High land, frequently level, suited to full studded formal-type homes costing \$50,000 to \$100,000.

Indian Hills Country Club

J. C. Nichols Nurseries

One tenth the area of Kansas City and not a foreclosed mortgage. Being a map and memorabilia upon the sober fact that Kansas City Country Club District, 4000 acres in length and breadth, home of 25,000 best people and largest unendowed U.S. subdivision, is still very much a going concern.

Westwood Hills 1923

Westwood Park 1922

Here mostly two-story houses of English and Colonial designs ranging \$10,000 to \$12,000.

Country Day School (Boys)

Original site of the Kansas City Country Club in 1922. Mr. Jacob L. loose (close relatives Sunshine Biscuits) bought it and gave it to the city as Jacob L. loose Memorial Park

COUNTRY CLUB PLAZA

Duplexes

1929, 500 apartments, under them Nichols' headquarters, on top of them Nichols' towers, but in them not a Nichols nickel!

Three miles to Kansas City's Business District  
Parking is a pleasure in these. An eight story building, the world's fanciest station, was refused a place here

Here lived William Rockhill Nelson, here now the art gallery which bears his name, built under Prairie Nichols' direction

Church

Barlow school carts

Colonial shops

Nichols headquarters  
First Nichols' built house. Neighboring were a brick yard and two factories

Colonial shops

Sunset Hill School (Girls)

Country Side

1909

"Neighborhood morale" has kept it young

K. C. University

Hall O' Donnelly, famous kidnapper

and senator James A. Reed, who married her

Rockhill Park 1908  
First section of the District to be planned, improved and sold

Not controlled... says J. C. Nichols: The common rectangular street planning is the main cause of our unwise standardization...

What if one of you, while still a boy on the farm, failed to run out diagonally across the field to bring home the cow? What bird in the air, fish in the sea, or even the savage beast in the forest so heralds itself by rectangular movement?

J. C. Nichols' Planting Mill  
Brookside shops, oldest and second largest shopping center in the District. Nichols' operated buses (the latter is a money-lover) leave here for Indian Hills

THE WARD ESTATE

Sunset Hill 1910

Hugh C. Ward was once impressed to see J. C. Nichols working up to his hips in water in Brush Creek during a flood. This it is to be hoped, hum to place his estate under J. C. Nichols' management. The Ward property was naturally suited for higher priced homes.

The District's east and west streets escape the north-south flow of traffic

Throughout Country Side Extension and South Country Side (above) Southwood Park and Creswood (above east) and Hamptead Gardens, Country Club Ridge, Country Club Heights, Wornall Manor, Ardenwood Heights and the Ardenwood Park are homes of moderate cost and varied design. At the extreme southeast corner a bungalow development.

Church

Here Standard Oil first accepted restricted design for a filling station (1910)

Proposed shops

The Kansas City Star George B. Longan

Church

Proposed shops



Tyner-Murphy

## Foreclosure is Unknown

inheritance tax in Kansas is really considerably less in practically all cases than it is in Missouri, in all ordinary cases.

*Salesman:* What was this question that was brought up about some owners in Mission Hills wanting to move back to Missouri?

*Mr. Nichols:* That was due to the fact that Missouri was making some demand upon them to pay an income tax in Missouri. You men know there is no State income tax in Kansas today. The State income tax in Missouri is one per cent, so a man has one per cent less tax in Kansas, so far as State income tax is concerned, assuming that he doesn't have to pay it in Missouri, and some of the big attorneys advise that you do not have to pay in Missouri if you live in Kansas.

With the exception of two or three of the earliest syndicates, the J. C. Nichols Companies have had no outside capital. Each step in the organization's growth has been marked — has in fact been made possible — by the successful marketing of another unit. The Country Club District today represents about 100 separate purchases of land. Biggest of these purchases — a million dollar deal — was that of the Armour property, a 600-acre tract now constituting the southeast corner of the District. Second biggest in point of cost was that of a 300-acre tract just north of the Armour property which a pioneer family named Wornall had held for years. The Wornall purchase was made in 1914; the Armour deal in 1922. Most often land was bought on long-time contracts of seldom less than fifteen years, with a release arrangement whereby the various lots could be paid for as they were sold.

**Restrictions.** J. C. Nichols made the mold into which the plasma of a growing city poured. The District's 4,000 acres are distinctly Nichols Land. The average Kansas Citian would be surprised to hear that the J. C. Nichols Companies' assets have a book value of but \$2,000,000, including real estate owned and mortgage

notes receivable. In 1925 the Ward heirs took back the control of their property, but that made it nonetheless a part of the Country Club District. By 1929 many an apartment towered in Nichols Land, and these, too, felt the imprint of the mold, though not one cent of J. C. Nichols' is invested in apartments.

For when they themselves did not do the building, the Nichols Companies figured out what they wanted built and then they wrote restrictions to bring about that end. One paragraph written into the conveyance on a lot in Rockhill Park was enough to cover the matter of restrictions. These were binding for 20 years, and no provision was made for renewing them. Houses were to cost no less than \$3,000; apartment houses and commercial structures were excluded. It now requires nine pages of closely printed matter to produce the desired results.

By 1910 the importance of including a clause providing for renewal of restrictions was realized. The new clause stipulated that the owners of a majority of the square footage in a particular section of the District were to meet together five years prior to the expiration of a 25-year term to renew or modify the restrictions applying to them. Later it was foreseen that these owners' meetings might not come off, and that thus the restrictions still might be allowed to lapse. In 1914 provision for automatic extension of the restrictions, unless the owners met and modified them, was included.

From the beginning it has been the Nichols Companies' practice to group together homes of similar size and cost. It has also always been necessary for the architectural plans of all new building and alterations to be approved by the company. In numerous instances group architectural treatment has been practiced with splendid effect. The problem of transition from houses of low cost to those more expensive, from houses of one architectural style to those of another feeling, is one which has received special attention.

**"Neighborhood Morale."** As the development grew, residents were encouraged to keep their houses in repair, to landscape their premises and in general to take interest in the neatness and orderliness of their neighborhoods. The Nichols organization, with many a second mortgage in its safe, became a kind of permanent setting hen. Lectures were given on gardening, landscape architecture and interior decorating. Bread crumbs and scraps of suet were thrown out for the birds. Birdhouse building and cat exterminating were fostered. Children were taught in the schools to respect the art treasures with which the District is plentifully endowed.

Safe to say, the 200 odd parks and parklets which the Nichols organization has built throughout the District are unique in the annals of city building. In the larger parks lakes of considerable size have been built and landscaped, and in them are picturesque bridges, bridle trails, picnic ovens. The smaller parks scintillate with fountains, vases, balustrades, pergolas and statuary which are Subdivider Nichols' pride and joy.

Homes associations have been organized in the various districts, of which every resident in each neighborhood is a member. Each community council has the care of its own district at heart. Over the entire territory there is an assessment of approximately ten cents per square foot per year, which provides for enforcement of all restrictions and policing of the grounds.

"The really big thing about the association and its work," reads a recent annual report of the directors of the Country Side Association, "is not the several services that it gives. . . . It is the maintenance of the value of everyone's property by establishing and perpetuating high standards of excellence in the minds of our people. It lies in constantly fighting the tendency to neglect the incipient little things that lead to deterioration of a community."

The idea of a community organization with prestige and power to act for the com-



Tyner-Murphy

### Country Club Plaza, Gateway to Nichols Land

mon good was developed by the J. C. Nichols Companies, and the achievement has inspired similar organizations in many another city. Within the Nichols organization the result of the homes association effort is affectionately called "neighborhood morale," and not without reason, for lending institutions with first mortgages on property in the Country Club District find in this feature the greatest assurance of the security of their investment. In more than 25 years there never has been a foreclosure of a first mortgage arranged for by the Nichols Companies.

**The Plaza.** Throughout the District eight shopping centers have been placed in locations convenient to their respective neighborhoods, but so handled that they are not an unpleasant intrusion in the section. This has been done by using a refined design, somewhat residential in character; by holding the buildings low, placing them back from the street with grass and trees in front of them; and in many instances providing loading courts in the rear. They are generally surrounded by trees, and frequently duplexes, churches and schools serve as a buffer between them and the residence areas. Greatest of these is the Country Club Plaza.

Strategically located at that corner of the more or less triangular Country Club District which points northward toward Kansas City's main business district, the Plaza is surrounded by a belt of land which the Nichols Companies developed and sold for apartments, reserving the right to approve the plans. The architecture of the entire ensemble is of Spanish precedent. One hundred thousand people live in the immediate vicinity. The main line of traffic to the southwest, to the Country Club District, has been by-passed. This was an innovation in real estate practice. A suburban shop development had not just been allowed to grow up around a main traffic artery, with its subsequent congestion and lack of parking conveniences.

Other suburban developments were stud-

ied to determine what kinds of enterprises would pay in a location of this kind. Shops were grouped so that kindred ones were near together. Streets were made ample in width, 50 per cent of the ground area being devoted to street use. Interior loading courts have been provided. In few instances do the store buildings rise more than two stories in height.

Two large blocks have been set aside as free parking space for the Plaza. Subdrained, paved, and lighted with underground conduits, they are effectively surrounded by Spanish stucco walls with tile laid on the tops. Gateways of old world wrought iron, planting, pottery, statuary and fountains contribute in making them possibly the fanciest parking stations in existence.

Country Club Plaza lessees are carefully chosen and highly restricted. Tenants and employes are required to park their cars in the parking stations, every car so parked freeing curb space for 24 possible shop patrons. Billboards, overhanging signs and outdoor neon signs have been prohibited with the thought that "in the long run control eliminating the unsightly and the ugly will secure for each member of the community far more benefit than the loss ex-

perienced by foregoing the practice of independent warfare for identity."

The site for the Plaza was bought up quietly, beginning in 1920. The ground was low and not good residential property. First shops in the development were completed in 1922. There are at this time approximately 200 store rooms in the Plaza, every one of which is rented. Thus the Plaza is not only an architectural gem; as a steady source of income it is a financial gem as well. The Plaza Bank of Commerce, established in 1929 by interests identified with the Commerce Trust Co. serves the district. In the Plaza, too, are the colorful and sumptuous offices of the J. C. Nichols Companies, chief feature of which is the tower containing J. C. Nichols' private office. With its high ceilings, its roof garden, its dining room and private kitchen, the latter is perhaps the most unique inner sanctum west of the Mississippi.

Here (when he is not in Washington helping plan the nation's Capital) J. C. Nichols directs the crack organization which he has built up through the years. An *esprit de corps* exists in his organization which no visitor fails to marvel at. He sets the tempo and actually works harder than anyone in his employ.

*Typical among the activities sponsored by the J. C. Nichols Companies is the annual Art Fair at Country Club Plaza. At this year's fair, held last month, silhouette cutters were rife, but the attendance was brisk and so was business at the Plaza.*



Tyner-Murphy

# NATIONAL COPPER-STEEL RUST-RESISTING PIPE

for soil, waste,  
vent lines,  
rain leaders  
and steam  
returns



No matter what type of building, the modern architect and engineer look to the durability of the equipment to hold down maintenance costs. Pipe, especially, plays an important part when not only repairs or replacements, but also possible interruptions to service are considered. This is why NATIONAL Copper-Steel Pipe is being increasingly used for soil, waste, vent lines, rain leaders, and steam returns in the modern industrial building. Those responsible know that copper-steel pipe lasts longer where

atmospheric corrosion or certain alternate wet and dry conditions prevail. Numerous tests and extensive installations by leading users the country over have again and again confirmed this fact. And remember, you don't have to pay a high premium for copper-steel—just a trifle over regular pipe; yet you are assured of rust resistance not surpassed by any ferrous material within a justifiable price range. Take advantage of this economy and specify NATIONAL—*The Original Copper-Steel Pipe* (Made since 1911).

LOOK FOR THE GREEN COLOR—National Copper-Steel Pipe is marked as follows: Black Pipe—Smaller sizes colored green. Larger sizes, two green stripes running lengthwise. Galvanized Pipe—All sizes, two green stripes running lengthwise.

NATIONAL TUBE COMPANY • Pittsburgh, Pa.

Subsidiary of United States Steel Corporation

# MANAGERS, INC.

## Two Chicago architects beget a subsidiary, evolve new practices in management.

A YEAR ago Chicago taxi drivers were wont to scratch their heads a bit when their fares bid them drive to the St. Clair Hotel. Today the St. Clair, no bigger than it was, no better located, is no puzzle to hackmen. They know it well, for what Repeal has done in degree to almost every hotel in Chicago, it has done in quantity to the St. Clair.

In what was once a store room is now a favorite cocktail spot for Gold Coasters; on its dead loss roof terrace is a profitable Sky Tavern; in its little used ballroom is now a popular "Jungle Room." With these three baits the St. Clair has gained a new prominence as a liquor dispensary, which in turn has enabled it to shake off the threat of receivership.

But that would be true of a half dozen other Chicago hotels. The added fact that makes the St. Clair's rejuvenation newsworthy is the presence behind the scenes of Managers, Inc., a comparatively new and peculiarly successful management firm specializing in hotels and apartment hotels. Managers, Inc., is not composed of astute veterans in Chicago realty, but rather of two architects who came to the conclusion that architects would have to change their ways if they were to remain king-pins in the building world. Forced into management of properties in which they were financially concerned, the two architects, Samuel Oman and Samuel Lilienthal, stayed in the business when they found they were equipped especially well to handle all kinds of properties. From managing buildings which they had promoted, designed and built, they branched out into management of buildings for other owners. Today, their list takes in 26 buildings, residential and commercial.

Late in 1932 when 54 residential hotels contributed to a University of Chicago survey, Managers, Inc., buildings ranked well against the field. Comparative tables:

	Average 54	Twelve	Residential	O & L	Hotels	Properties
Comparative average room revenue (per cent of previous year).....	75.26%	80%				
Average occupancy	59.51%	77%				
Occupancy decrease from previous year.....	11.05%	8.3%				
Average revenue per occupied room	\$1.49	\$1.47				
Average decrease per occupied room from previous year.....	15.34%	12.50%				

**Sam & Sam.** Active direction is handled by baldish, tanned Samuel S. Oman, at 37 a successful architect, and seasoned in the shrewd, hard-hitting field of management. Quick thinking, quick spoken, he is impatient of delays, craves action on whatever is undertaken. His is perhaps the antithesis of the conventional architectural background, for his parents were not wealthy, he lacked influential friends, European education. He was raised in an orphanage (which he now helps support and direct); when 11 years old was employed by an architect at \$3 per week.

Following graduation from the University



Connally

Partner Lilienthal

of Illinois he worked in a Chicago architectural office; married against his employer's wishes; resigned and opened his own office in 1920 in the midst of building inactivity of that year.

Partner Samuel Lilienthal, also 37, is the firm's mathematician. Not so unfortunately reared, he too earned a large part of his way through the University of Illinois, "workin' on the railroad" where as an engineering student he gained experience in valuation work and maintenance by way of carrying a transit.

Following graduation Engineer Lilienthal became structural designer and superintendent for a general contractor; butted up against the hard facts and harder language of multi-story building jobs, yet remained a soft-spoken gentleman under all normal conditions. Coupled with a thirst for exact, engineering knowledge about any contemplated or going project, he is the plunger type.

**Growth.** On May 1, 1923, the firm of Oman & Lilienthal was organized on \$5,000 borrowed capital. In 1927 the first partnership agreement was drawn up. Fortunes of the firm went up with the rising tide of building. In 1924 the young men planned and built the 3-story Elaine Apartments. In 1925 they planned and built the Aldine 3-story cooperative, then the 444 Belmont 7-story cooperative. They had a strong urge to build multi-story fireproof structures, but when prospective clients asked, "What have you done?" they could only shrug — then went out and organized their own syndicates, which averaged one building a year in addition to general practice which brought commissions for apartment buildings, commercial and industrial, department stores.

Having participated in the original syndicates, the partners were drawn into management problems of the properties in time of trouble. After a thorough salvage survey they concluded: "In general there were few



Seymour

Partner Oman

property managers or management concerns, particularly in the residential property class, whom we considered competent and aggressive enough to operate properties under adverse conditions with any degree of success. We also found that the principal deficiency in the management of real estate properties was attributed to the fact that managers were not suitably trained or educated for this type of work, also that they were not scientific enough in their analyses to determine the proper relationship between income, operative and maintenance costs." And out of their examination of the facts emerged a subsidiary to their architectural firm, Managers, Inc.

The partners' flair for developing detailed information about any problem, be it coal pile, apartment building or hotel, then presenting the data in easily understood or interpreted chart or graph form is seen in every move the organization makes.

**The Bible.** The whole secret, if it is a

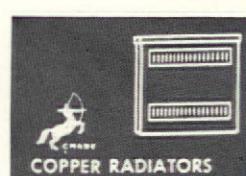
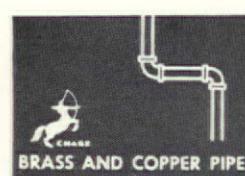
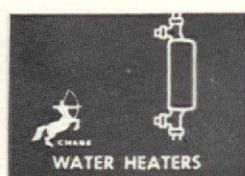
## REAL ESTATE

WANTED: a new word for  
"MODERNIZATION"

BOYS' AGENCY, 39 CORTLANDT ST.  
BOYS 16 yrs. Prot. 3-4 yrs.  
essential, rapid  
giving

employed and have fair education. Write.  
references, present occupation.

PROSPECTIVE BUYERS and tenants are used to being told that this or that property has been "modernized." But unless your statement can be backed up with solid facts it doesn't mean a thing. Tell your customers, "We replaced all the old rusty plumbing with Chase copper water tubing," or "See those new downspouts—they're all Chase copper," or "That new Chase copper water heater will never rust"—and you're saying something. That's why it pays to liberally sprinkle remodeling specifications with the name Chase.



**C H A S E   B R A S S   &   C O P P E R   C O .**

—Incorporated—

Subsidiary of Kennecott Copper Corporation

WATERBURY, CONN.

secret, of Managers, Inc., methods, lies in an ordinary looking black ledger known around the office as "the bible," in which a daily record of income by departments is matched with a remarkable daily record of operating costs by departments. The "bible" tells Managers, Inc., at the end of each day whether the property has made a profit, and if so how much, whether certain departments have cost more than they made, and if so how much.

In its classification of departmental income the "bible" follows standard hotel practice. In its breakdown and classification of expense items it follows recommendation of the "Uniform System of Accounts for Hotels," but from that point on it goes Bolshevik when viewed in the eyes of conservative hotel accountants.

"Ordinary accounting records wouldn't tell us what we wanted to know," says Partner Lilienthal. "It took too long."

The "bible" is an interesting study in accounting. Each income item is set down under its proper heading with space for daily showings. Room income is shown on a basis of both occupied and available rooms. Restaurant, bar, commissary, miscellaneous items are set down. Then on the opposite side of the ledger appears every operating department, with a record of its daily cost or operation. Weekly totals are provided automatically, as are monthly totals, making periodic comparison merely a matter of turning pages and finding the corresponding day, week or month in the same position on another page.

"Some of it is an approximation," admit Partners Oman and Lilienthal. "But it is close. We sometimes come out within 15 cents of the accountant's final figures. Or we may be as much as \$10 to \$15 out of line in a month. Suppose we go out and spend \$200 for linens that we know will last six months. It wouldn't be accurate to charge that entire amount against one day's operation of the department. So we break that charge down, divide it into a daily charge for six



*Hedrich-Blessing*

#### Atop the St. Clair

months and put it on our books that way. Only the daily, pro-rated cost of that linen is charged against the department for any day of the entire period. Every other operating expense is broken down the same way.

**"Equivalent Rooms."** "But there's more to it than merely keeping a nice set of records. You can heat 2,000 rooms with great efficiency, and maybe at minimum cost, but if there's nobody there to occupy them your effort is wasted.

"We see these rooms as space, as a commodity, as merchandise — the most perishable merchandise in the world. For if a room is unoccupied today, there can be no clearance sale tomorrow. That day's space is gone forever."

Thus the final step in Oman & Lilienthal management involves merchandising of its space on their own system of "equivalent room basis." Assume ten typical floors of one-room kitchenette apartments. Managers, Inc., measures the areas of living rooms and kitchenettes, then grades each apartment on an "equivalent room basis."

Based on experience with many similar apartments, an arbitrary number of square feet is selected as an equivalent room, to be expressed by the coefficient No. 1.

Ten apartments measuring 165 sq. ft. might each be expressed by the coefficient 1.2 equivalent rooms, each being slightly larger than the average, involving more carpet, wall paper, furniture, service. Therefore, in figuring a rental basis for these ten apartments their basic cost would be figured as twelve equivalent rooms, or 1.2 times more than a similar but smaller apartment of standard size.

The apartments are thus first figured on a coldly scientific basis, then are graded for desirability, closet size, cross ventilation, corner location, elevation of floor on which apartment is located, outlook and similar considerations, after which prices are determined, and a graded rental schedule of single, double occupancy, daily, weekly, monthly, six months and one year are worked out by a system of arbitrary, percentage discounts, which are smoothed off to round figures before being tabulated on sizable, lettered and numbered cards.

Managers, Inc., renting tricks are few but effective. Consistent newspaper and direct mail advertising are coupled with steady efforts at publicity. From department stores the firm has borrowed the practice of sending "shoppers" to competitive buildings to compare values. Each apartment is made up as soon as it is vacated, since Managers, Inc., learned early that prospects for furnished apartments like to feel they need do nothing but hang up their hats, turn on the gas, and start the dinner. Managers, Inc., spends an average of \$7.50 per apartment for "gew-gaws" and finds the \$7.50 worth spending.

While its management business prospers, the architectural firm goes on apace. Though each unit is operated separately, one feeds business to the other. And from architecture they learn about management; and from management they learn about architecture.



*Courtesy, Brunswick-Balke-Collender*

#### Converted Storeroom



*Hedrich-Blessing*

#### Ballroom into Jungle Room

# Important Announcement

Not in a decade have we announced a product as potentially valuable to the building industry as the new

# Johns-Manville ASBESTOS FLEXBOARD

... a fireproof, asbestos-cement product, whose attractive colors are an integral part of the material itself... a sheet that can be installed as a decorative wall surface for as little as 25 to 30 cents per sq. ft.

WE consider this one of the most important announcements we have ever addressed to the architect. It has to do with Johns-Manville Asbestos Flexboard, a product with amazing potentialities because it solves one of today's major building problems... *the wall re-surfacing of existing structures that must be modernized on limited budgets.*

Johns-Manville Asbestos Flexboard is fireproof, because it is made from asbestos fibre and Portland cement. Colors are not surface coatings; they go all the way through and are a basic

part of the product. It is sanitary and durable. The sheets are as easily worked as ordinary lumber.

And it is surprisingly inexpensive. The regular sheets can be installed for as little as 25 or 30 cents per sq. ft., and the tile pattern for only slightly more.

Let us furnish samples and complete information on the range of colors and styles, methods of application, and suggestions for installation not only in residential buildings, but in many types of commercial buildings and mercantile establishments.

When you have examined the material, when you have studied its unique combination of qualities, you will, we believe, agree that here is a product that promises to revolutionize present methods of treating wall surfaces.

#### **J-M makes many other remodeling materials**

Ask us also about the many other J-M materials that fit so ideally into any modernization program... Asbestos and Asphalt Shingles, Built-Up Roofing, Insulating Board, Home Insulation, Asbestos Wainscoting, etc. Johns-Manville, 22 East 40th St., N. Y. C.

 **Johns-Manville**  
BUILDING MATERIALS



JOHNS-MANVILLE, 22 East 40th Street, New York  
Send me samples and complete information on the new J-M Asbestos Flexboard.

Name \_\_\_\_\_ Title \_\_\_\_\_

Firm Name \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

AF-10-34

# BUILDING & LOANS ARE MIRRORED

in a 36-State survey; they find they are not appreciated; insurance the favored investment.

EVERY man, every business likes to ask from time to time, as the foot-tapping Bill Robinson does across the footlights—"How'm I doin'?"

Couple of months ago the building and loan industry, through the American Savings, Building and Loan Institute, sought to find out how it was doing. And last month the answer came back, "In some respects, not so well."

It learned, for instance:

That the majority of the public is not building and loan minded.

That building and loan compares unfavorably in the minds of most people with other types of investments.

It learned other things of a favorable nature, but in general it was convinced that a strong educational campaign was seriously needed to establish the building and loan idea more favorably, more securely in the minds of America's borrowing and investing public.

**Survey.** To find out all the things it wanted to know, the Institute retained the advertising firm of J. Walter Thompson Company, through its Chicago office, to conduct a survey. In 102 cities scattered through 36 States personal interviewers called on 2,385 people, one-third of them women, with a questionnaire. All businesses and professions, all classifications of wage earners, except the lowest income group, were included in the quizzing.

Particularly revealing were the preferences expressed toward various types of investments according to the experience those interviewed had had with them. The chart at right tells the story. Insurance for protection runs first, insurance for savings second, government bonds third, postal savings fourth, savings banks fifth, real estate bonds and mortgages sixth, industrial and public utility bonds seventh, and building and loan eighth, with stocks ninth and last.

A similar question framed to find out whether people thought voluntarily of building and loan as an investment produced a similar result. The question was worded: *If you were advising a younger brother or a friend as to the most satisfactory way of investing his savings, where would you advise him to put his money after provision for current expenses and a reserve for emergencies in cash, checking or savings account? (This of course does not eliminate the bank or savings account as the place for further savings.)* Broken down into percentages, the answers were:

Type of Investment	Percentage
Insurance	28.7
United States Bonds	27.7

Bank savings account	24.9
Postal savings	12.1
Building and loan	9.8
Stocks	8.3
Real estate	7.7
Other bonds	7.2
All other types of investment	7.1

To the question: *Under normal conditions, if you wanted to borrow money to build or buy a home, to what type of institution would you go?* the replies were as follows:

Banks	43.6%
Building and loan	28.9%
Private lender	16.8%
Mortgage company	5.7%
Federal Government	2.3%
Insurance company	1.8%
All others	0.9%

The questionnaire further revealed the growing preference for long-term amortized mortgages over short-term straight mortgages, where the tabulations showed 76 per cent favoring the former and 24 per cent the latter. If they were lending, however, 50.1

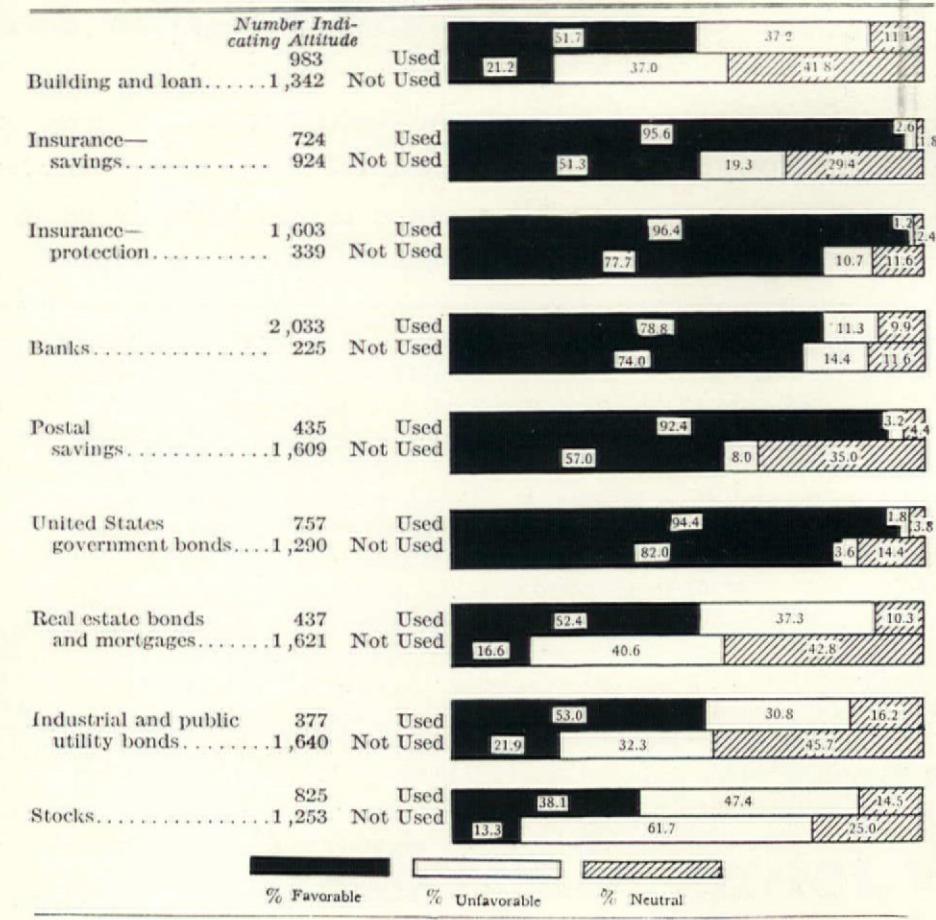
per cent said they would prefer to make short term loans.

Concerning types of savings plans preferred, 84.3 per cent liked being able to get their money back quickly even with a low interest rate more than getting a higher rate of interest with restrictions on withdrawal. A fixed low return was favored by 73.5 per cent as opposed to a flexible, probably higher return such as mutual companies offer. Almost the same percentage (79.9) preferred paying no withdrawal charge even with low interest as compared with paying a withdrawal penalty and getting a higher rate of interest. Losing  $\frac{1}{2}$  of 1 per cent for U. S. guarantee of deposits was preferred by 89.9 per cent.

Especially interesting, in view of the increased conversion of building and loan associations into Federal savings and loan associations, was the 94.8 per cent vote for Federal supervision of b. & l.'s as compared with State supervision.

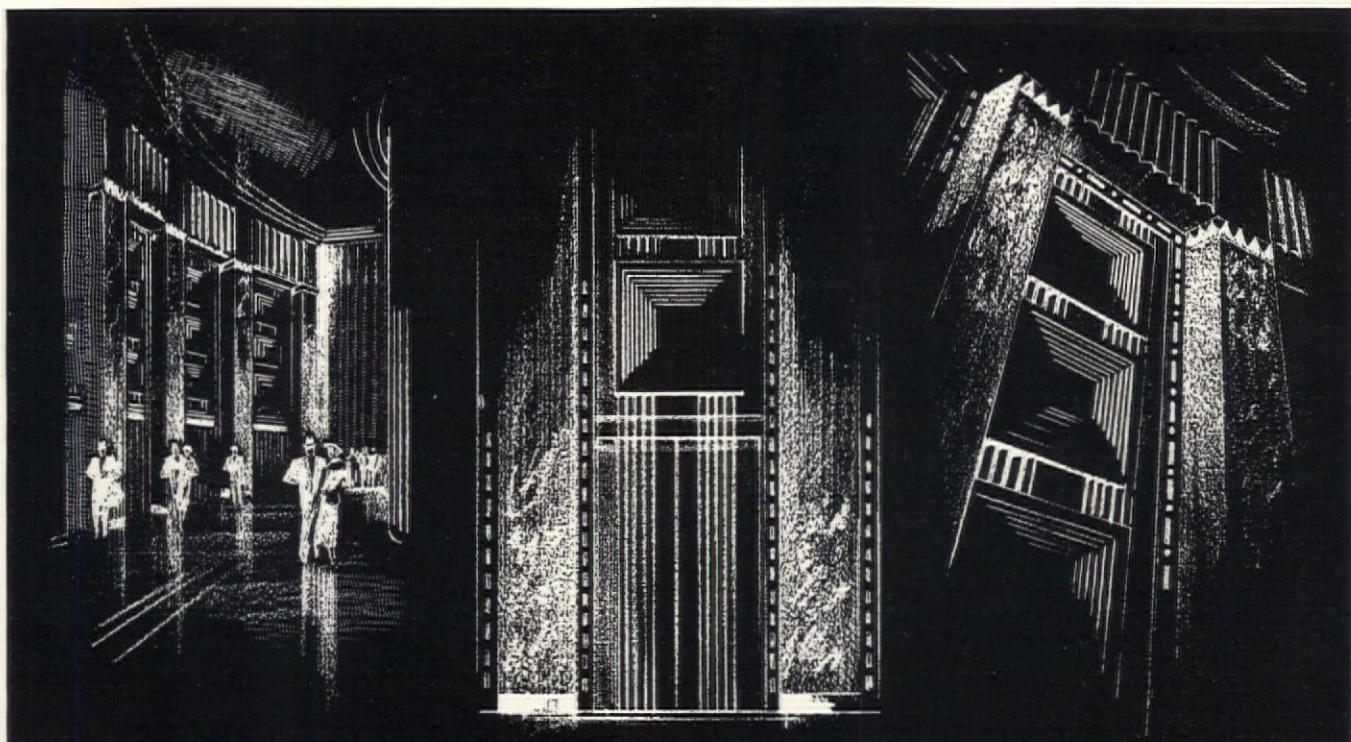
As a result of the survey, the Institute urged its members to inaugurate educational campaigns on the building and loan idea. There was a hint of a national campaign of advertising in the closing sentence of the conclusions reached by the Institute, when it said, "The answer would seem to be vigorous, concerted action to instill in the public an appreciation of what the building and loan has to offer."

ATTITUDES TOWARD VARIOUS INVESTMENTS ACCORDING TO EXPERIENCE WITH THEM



Insurance is Heaviest in the Black

Copyright, American Savings, Building and Loan Institute



*Sketches for Modernization of Office Building Foyer by Antonio Di Nardo*

## *Versatile Alcoa Aluminum*

GIVES FULL EXPRESSION TO MODERN DESIGN

• Modernization can hardly be modern without Alcoa Aluminum.

For Alcoa Aluminum speaks the modern language of lightness, airiness. It speaks, too, in the modern idiom of economy.

From a strictly professional point of view, the versatility of Alcoa Aluminum should be an inspiration to free and untrammeled design. Aided by the facile craft of the metal worker, your details will be embodied in Alcoa Aluminum without physical or constructional limitation.

Alcoa Aluminum is highly resistant to corrosion. The Alumilite Process, an electro-chemical method of deepening and hardening the natural oxide coating which forms on Aluminum, heightens corrosion resistance; reduces maintenance to the very minimum.

Our book, *Aluminum in Architecture*, has 234 fertile pages. One of these pages may suggest an answer you're looking for. May we send it to you?

ALUMINUM COMPANY OF AMERICA  
1866 Gulf Building, Pittsburgh, Pennsylvania



# ALCOA · ALUMINUM

## MERCHANT MAGRANE

cures a New England ill and makes a profit in the curing.

NEW ENGLAND has two kinds of towns: those that escaped and those that prospered under the 19th Century industrial boom. Lynn, Mass., falls in the second class. At one time the scene of more shoe-making than anywhere else in the U. S., its industries are now diversified, the flower of its prosperity somewhat withered.

Like every other N. E. manufacturing town, Lynn's prosperity was built on the exploitation of the skilled and semi-skilled labor that flocked to the U. S. in the Eighties and Nineties. Low pay and long working hours, coupled with life in cheaply constructed "factory tenements," common for years, are now harvesting a crop of strikes and rows and rows of dingy, unhealthy, uneconomic buildings. Lynn has its share of both.

Of strike news the newspapers last month were full; but there was news also of "factory tenements," for in Lynn is being carried on a tenement modernization program that bears repetition in other industrial towns similarly slum-smitten.

What Wanamaker is to Philadelphia, what Filene is to Boston, Magrane is to Lynn. It is, as the old bromide runs, more than a department store; it is an institution. For more than fifty years into its cash registers have chinked the coins of Lynn's

workers, enabling the first Magrane to leave to his children not only a department store, but a real estate trust conservatively placed on the books at \$1,000,000.

The bulk of the family's holdings was made up of heel-worn "factory tenements." So it was that when Charles E. Magrane inherited his father's place in the family business, he inherited also the problem of what to do with the tenements. The present head of the Magranes is not typically Boston Irish, though Irish he is, and close enough to Boston to claim it as his home if he cared to. Forty-one years old, he was educated at Exeter and Fordham University. Though his social conscience is sensitive, it was not conscience alone which persuaded him to take vigorous action on his tenements.

"The easiest course to pursue naturally would have been to continue to milk the property," said merchant Magrane, "but it seemed to me such a course would inevitably lead to disaster. I therefore determined that the only way open was to plan on a complete overhauling of our properties on a broad enough basis to place us beyond local competition."

Most laymen reaching such a conclusion would have turned over the job to a local architect or a local contractor. But Magrane's is full of materials that go into building; and as a merchant, Charles Magrane well knew the value of buying in quantity, doing his work in mass. So he established a separate organization to handle improvements of all the properties.

"During the past year we have constantly employed a crew of workmen ranging from 40 to 60 men. We have a general

superintendent in charge of the work. His duties are to hire the workmen, plan and lay out the work, buy, and see that the different subdivisions operate in unison.

"We have our own carpenter shop with all the necessary equipment; we even make up a considerable amount of our own finish. For instance, the soft pine flooring that we must take up before laying new oak floors, we remake in our carpenter shop into cappings for our tiled kitchens and bathrooms and as finish for our dining room dados.

"We have our own plumbing and steam fitting departments, and, of course, have our own paint shops. We have electric pipe cutting and threading machines, our own cement mixers, and do our own plastering and brick laying.

"We try, wherever possible, to have our men specialize. We also endeavor to standardize all branches of the work so that when our men are sent out to remodel an empty apartment, they know beforehand exactly what is to be done to the last detail.

"In purchasing supplies, the policy of standardization works very much to our advantage. For instance, we have selected a green tile for our kitchens. When we buy this tile we can safely order a carload and get a much lower price. This holds true of all our other supplies, on our paints for example, where we have not only standardized on colors, but on combinations."

Typical of Magrane modernizations is the row of factory tenements on Elm Street (see below) whereby using his own labor and mass buying, a \$26,641 expenditure trebled the income.

COST		
Plumbing and heating (labor and stock) . . . . .		\$6,500.00
Repiped whole house — connected domestic service to heating system — new water service — boilers		
Carpenter labor . . . . .	3,000.00	
Painting and papering . . . . .	8,000.00	
Electrical work (including fixtures) . . . . .	1,050.00	
Cement work — walks, curbing, grading . . . . .	500.00	
Plastering . . . . .	425.00	
Laying and sanding floors . . . . .	335.00	
Flooring 5000' @ \$75.00	375.00	
Linoleum — kitchens and baths . . . . .	960.00	
1 Apt. — Marbelle linoleum	\$49.35	
45' linoleum . . . . .	3.60	
Labor . . . . .	5.00	
Disc. . . . .	—7.40	
	\$50.55	
Marbelle linoleum stairways — \$106.00 each house . . . . .	530.00	
Waltile . . . . .	1,332.38	
19 Medicine cabinets . . . . .	@ \$8.78	166.82
19 Kitchen cabinets . . . . .	14.25	270.75
19 Gas stoves . . . . .	23.50	466.50
19 Ironing boards . . . . .	3.25	61.75
19 Frigidaires . . . . .	1,824.00	
19 Four-drawer cases . . . . .	4.10	77.90
Screens . . . . .	95.00	153.50
100 Galvanized screens . . . . .	58.50	
	\$153.50	
Shades 133 @ \$1.25		162.50
Incinerator \$150.00		270.00
120.00 — Installation . . . . .		100.00*
Architect . . . . .		100.00
Insurance . . . . .		
		\$26,641.10
INCOME		
	Weekly	Yearly
Before remodeling — 6 tenants . . . . .	@ \$7.50	\$45.00
After remodeling — 15 tenants . . . . .	8.00	\$2,340.00
— 4 tenants . . . . .	6.00	\$7,488.00

\* For design only, to Miss Eleanor Manning of Boston.



New Soles and a Shine for Shoe Workers' Houses



A  
STURDY FLOOR  
FOR BUSY BUILDINGS  
... remember *Linotile*  
for remodeling!

*Linotile was installed right over the worn ceramic tile floors in the Woodward Bldg., Washington, D. C. Alternating blocks of oyster and dark walnut make this corridor attractive and practical.*

**33,000 feet of Armstrong's Linotile** went into the remodeling of the Woodward Building, Washington, D. C. With this new floor and other refinishing, an old-appearing structure was transformed into a modern inviting office building. No longer are its corridors branded with age by cracked hard tile floors.

When you are drawing up remodeling plans, remember Linotile. Put it where traffic is heaviest, in corridors, lobbies, and elevators. Modern colorful floors of distinctive design work wonders in old buildings of all types.

Armstrong's Linotile has five important advantages which recommend it for busy buildings:

1. It comes in 32 colors, marble and plain, which afford an unlimited number of beautiful design effects.
2. It has remarkable durability . . . strongly resists indentation and heavy abrasive wear.
3. It is quickly installed over concrete, terrazzo, tile, or wood floors.
4. It is resilient . . . quiet and comfortable under foot.
5. It has a mirror-like, dirt-resistant surface that is easy and economical to keep clean.

## Armstrong's LINOTILE FLOORS

LINOLEUM ~ CORK TILE ~ ACCOTILE ~ RUBBER TILE

TODAY, clip the coupon below and get our free book containing colorplates and full information about Armstrong's Linotile. We will also send you names of Linotile floor contractors in your city. Armstrong Cork Company, Floor Division, 1204 State Street, Lancaster, Penna.



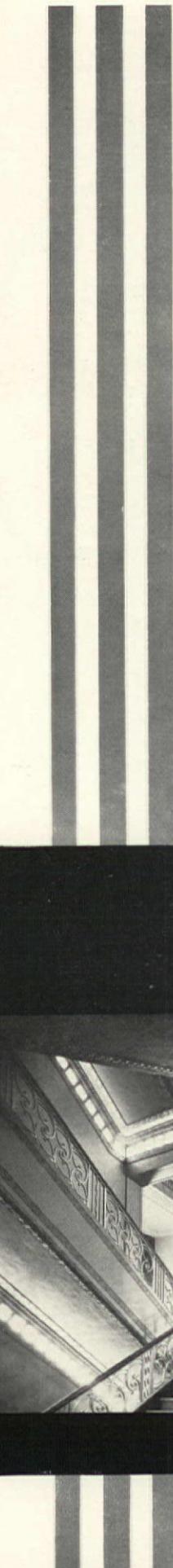
ARMSTRONG CORK COMPANY  
1204 State Street  
Lancaster, Pa.

Send your book "Individuality in Hand-laid Floors." Also a sample of Armstrong's Linotile.

Name.....

Address.....

City.....State.....



# Molding **LIGHT** into ornament



The illumination of the beautiful new St. Louis Municipal Auditorium is a notable achievement in the blending and harmonizing of a lighting system with the individuality of an attractive interior. La Beaume & Klein were the architects and Beaz-Kiel Construction Company, St. Louis, contractors. The fluted illuminating panels of Lumite Ambertone, and cylinder segments of "Monax" illuminating glass were manufactured by the Macbeth-Evans Glass Company for the Edwin F. Guth Company, St. Louis, who furnished the illuminating fixtures. MACBETH-EVANS GLASS COMPANY, Charleroi, Pa.

**Macbeth**  
*Architectural Glassware*



# THE FORUM OF EVENTS

(Continued)

## DEATHS

PETER CLARK, 56, stage designer, in Fairfield, Conn., August 20.

Mr. Clark was not the usual sort of stage designer. Interested since youth in mechanical engineering he devoted his energies to the invention and improvement of the machinery of the stage.

Among these were the counterweight system, now used in all modern theaters, and the hydraulic lift for lifting or lowering large sections of stage or orchestra pits. A less universally adopted device was the "mushroom tank" which enabled the old Hippodrome to put on the spectacular effect of rows of beautiful girls appearing and disappearing in the water. He was the builder of both the theater stages at Rockefeller Center.

Mr. Clark's personality and his readiness to give lavishly of his time and technical experience to many charitable causes gained him many friends among architects who elected him a member of The Architectural League and an honorary member of the Society of Beaux Arts Architects.

THOMAS R. KIMBALL, F.A.I.A., 72, architect, in Omaha, Neb., September 7.

Mr. Kimball, senior partner of the firm of Kimball, Steele & Sandham, for many years conducted a weekly class in painting, and had recently been Nebraska's co-director of CWA public art work.

Among the buildings he designed are St. Cecilia's Cathedral, the City Library, the old Burlington Station, and the World-Herald Building, all in Omaha. He was associate architect on the recently completed Federal Building.

He was architect-in-chief for the Trans-Mississippi Exposition in 1898, and for some time an adviser to the State Capitol Commission.

## COMPETITION

NEXT to Raymond Hood's Chicago Tribune Tower is now going up a building to house the *Tribune's* own radio station WGN (World's Greatest Newspaper). Satisfied that the tower competition was well worth the prize money, owner Robert R. McCormick of the *Tribune* is offering cash prizes for the design of the studio interior. Competitors have until noon, November 15, 1934, to deliver drawings. First prize is \$2,500, second \$750, third \$250, fourth \$100. In addition there are 21 honorable mentions worth \$50 apiece.

The competition is unusual in that the owners have taken every precaution to allow the competitor full scope for his imagination. Among helps to the designer is the table of sound absorbing units desirable in an acoustically proper room.



*For once slightly at sea, visiting housers about to start inspection tour of Chicago waterfront with Crane Co.'s president J. B. Berryman in his yacht. Ernest J. Bohn and Sir Raymond are keeping close to skipper Berryman. Dr. Kahn seems more interested in the pretty girl he has taken forward, while modest Henry Wright is peeping over Miss Samuel's shoulder. The rest of the guests are Chicagoans actively interested in housing and officials of the Crane Co.*

## HOUSING CIRCUS

ANY city with a housing problem and a doubt as to the capabilities of local advisers may find a way out of its troubles by applying to the National Association of Housing Officials to be added to the list of cities which are to receive the advice of the European group of housing experts now touring the United States.

For here is a group of but three people which has about as much collective actual experience as one is likely to find.

Heading the group is the dean of all housers, Sir Raymond Unwin. Designer and planner of Letchworth, the author of "Town Planning in Practice," he has invented much of present day slum clearance technique. He speaks as well as he writes and can be counted upon to present a realistic rather than a sentimental picture of the actual ills of a particular community.

No. 2 star is Miss A. J. Samuel, also of England. Years spent in management have taught her how people really comport themselves in modern minimum priced housing. Years spent in studying for her job beforehand enable her to interpret her management experience for others.

In the third ring is Ernest Kahn of Frankfort, Germany. General Manager of the Frankfort Housing Companies and former head of the Frankfurter Baukasse, he can prescribe for all financial ills.

They are being piloted on their survey, from which they hope to gain as much as they give, by Cleveland's Ernest J. Bohn, president of the Association and New York's Henry Wright.

## WREN, RENNIE, AND RECONSTRUCTION

LONDON BRIDGE has not yet fallen down, but Waterloo Bridge is being demolished and the passage of this old landmark (of more sentimental than architectural worth) has started a movement that may yet make over the whole face of London.

When, a few years ago, it was proposed to change the entire traffic system by the construction of a broad bridge at Charing Cross, with great traffic circuses at either end, the scheme was rejected by Parliament because of the cost.

Now, however, the London County Council is discussing not only a housing scheme involving 250,000 persons and the destruction of some 16,000 buildings, but the entire remodeling of the south bank of the Thames from Waterloo Bridge to Westminster Bridge.

This project will involve an estimated expenditure of over \$7,000,000 for the acquisition of land alone. The amount that will have to be spent for the reconstruction will be much greater. The district is rich in historic associations for the native Londoner, but, fortunately for the proponents of the modernization, has few actual buildings of either historic or artistic interest.

The low lying green mud flats will be replaced by terraces and a grand promenade. The buildings will be replaced by a unified row of ultramodern fronts of what the English are pleased to consider skyscraper type.

---

# WHAT IS MODERN ELEVATOR PRACTICE IN RESIDENTIAL BUILDINGS?

---

**PRIVATE RESIDENCES** Residence elevators are no longer limited to palatial homes, and owners and architects are now recognizing that an elevator is among the conveniences to be expected in a well-equipped modern home of even moderate cost. The increased use of elevators in private homes has been facilitated by recent developments which greatly reduce the space requirements and the cost of installation. The Otis Personal-Service Elevator, with full automatic control, is an ideal equipment for those residences requiring moderate service. It can operate on ordinary house circuits, can be installed in a limited space, makes unnecessary penthouse extensions above the roof and is a self-contained unit with structural steel framing relieving the building proper of virtually all loads. The carrying capacity is 650 pounds (four persons), the speed 35 feet per minute and the maximum platform size 3'2" x 3'8".

For residences requiring more intensive service, other equipment with capacities up to 1000 pounds and speeds up to 100 feet per minute are available with platform sizes to correspond.

**SMALL APARTMENTS** It is becoming increasingly apparent that tenants consider elevators a necessity even in the smaller apartments, and that a high return on the investment in elevators is offered through the possibility of increased rentals and reduced vacancies. One equipment designed particularly for this class of service in new buildings has a capacity of

1200 pounds, a speed of 100 feet per minute and a platform size of 5'6" x 3'6". It is available with automatic control, either regular push button or the more popular collective push button. For present walk-up apartments where available space is limited, it is necessary in practically every instance to make a thorough survey of the property to decide elevator locations and details.

## **MEDIUM AND LARGE APARTMENTS**

The physical characteristics of these buildings, their geographical and competitive locations, together with the number and type of tenants, combine to determine their proper elevator equipment. The capacities vary from 1500 to 3000 pounds, the speeds from 150 to 700 feet per minute, and all varieties of control are employed. The modern trend is naturally towards the use of automatic elevators that can be safely operated with or without an attendant.

Unusual diligence must be exercised in eliminating possible passenger hazards in all residential buildings because of the presence of children. Otis makes no compromise with safety and in many instances Otis Standards assure a higher degree of safety than required by existing codes.

All Otis offices are equipped to give complete and detailed information on the subject of proper elevator equipment for all types of buildings and since this service is free of obligation, it is desirable for Architects and Engineers to make it available to their organizations.

---

**OTIS ELEVATOR COMPANY—Offices in all principal cities**

---



IF you are shooting at complete satisfaction all-around...your own as well as your client's...you will find that a closed specification for Libbey-Owens-Ford Improved Quality Glass (brighter, clearer, flatter) will help you bring it down.

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**QUALITY GLASS**

## FORUM OF EVENTS

(Continued)

### BOOKS

#### Prolegomena to an Economic System

America's Capacity to Produce, by Edwin G. Nourse and Associates, The Brookings Institution, Washington, D. C., xiii, 608 pp., tables, appendices, index, 8vo.

"Poverty has always been the lot of the great majority of mankind. It has been only within the very recent past that geographic exploration and scientific development have encouraged the human family seriously to entertain the idea that life could be so organized and conducted as to achieve general well-being."

The first sentence from the foreword to this study of production capacity sets the pace for the whole work. Designed as the first of four volumes to have the general title "The Distribution of Wealth and Income in Relation to Economic Progress," the current publication is devoted to the presentation of facts or as near facts as can be adduced. Subsequent volumes will have the titles "America's Capacity to Consume," "The Formation of Capital," "Income and Economic Progress."

It is difficult to review critically the work of Mr. Nourse and his associates because they have stuck steadfastly to the task they set themselves; they have not gone off into the pleasant field of social and economic deduction from insufficient premises. As a result there are no opinions expressed which one may seize upon and either approve or disapprove with appropriate warmth.

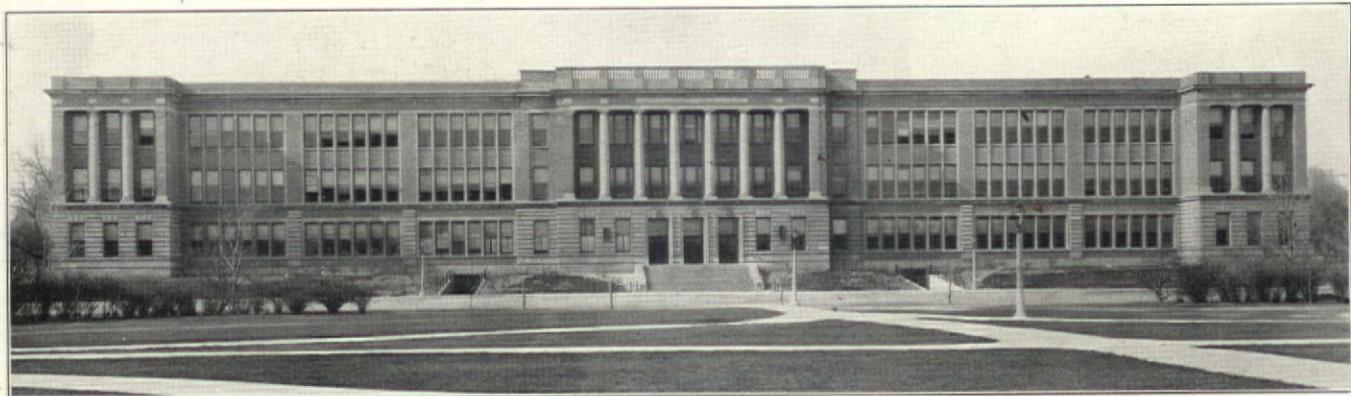
It is, on the other hand, a pleasure to read a volume which draws no conclusions which cannot be substantiated by the evidence presented. In all recent similar works one is appalled to realize how little real statistical information exists in the U. S. Each researcher is forced to apologize for the incompleteness of his information and to admit that his conclusion may be invalid on that account.

Under various headings the authors have listed and charted the actual production capacity of raw materials, agricultural products and manufactured articles of all sorts. In addition they have considered labor and the capacity of transportation facilities.

Their exhaustive examination of the figures available in each field has been such that they have, in cases where rated capacities seemed to be more wish fulfillment than anything else, weighted them to produce a more realistic picture. They concluded that in the last boom year, 1929, the country was producing at about 80 per cent of its then capacity. Further they contend that the expansion during the three decades from 1900 to 1930 did not produce an appreciably greater margin between capacity and production than had been the case before. This will perhaps startle those who think that the wartime expansion had enormously changed this ratio.

Beyond this the authors, wisely, do not attempt to go. The next volume of the study will be devoted to the capacity to consume. When that is ready, it may be possible to visualize something of the real state of affairs.

Even so brief a review as this cannot be closed without mentioning the excellent reproduction of charts, the typography, and the printing. All combine to make the always difficult task of the exposition of statistics as easy as possible.



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Architecture for the New Theater, September Number of Theatre Arts Monthly, Theatre Arts Inc., New York, 80 pp., quarto, 50 cents.

This special number of this well-known magazine is devoted to the architecture of smaller theaters. The editors are particularly to be thanked for including the article, "Theater Building and Ownership" by Morton Eustis. This sort of thing should have been said long ago. There is a great deal of debunking here in a very few words.

The article reproducing the correspondence between Lescaze and a client is also worthy of study by aspiring theater architects. It would be difficult to find clearer epistolary explanations to a client of the reasons for the design presented.

The foreign designs for projected theaters of various sorts remind one a good deal of a collection of bathroom fixtures without the bathroom. It does not really seem necessary to carry the principle of functional architecture to the point where it is all function and little if any architecture.

The article by Frederic Alden Pawley on "Theatre Types" is rendered particularly useful by the illustrations and by the tabulations of cost data and dimensions.

Frederick J. Kiesler contributes some rhodomontades in the flossy language considered necessary, by some, to the discussion of modern art of any kind.

\*\*\*

First Aid for the Ailing House, by Roger B. Whitman, Whittlesey House, McGraw-Hill Book Company, New York, xvi, 320 pp., text illustr., 8vo., \$2.

Intended to be a handbook for the house owner of moderate means, "First Aid for the Ailing House" is probably admirable

for the purpose, but it should be still more useful as a source of valuable hints to architects surveying run-down houses in need of alteration or repair. Even the chapters on Stain Removal, Furniture, and Insect Control will help an architect to answer the questions of those clients who expect him to know everything.

All the information contained is stated in simple, clear, non-technical language and is, with one exception, sufficiently explicit without being so detailed as to be confusing. The one exception is the information on figuring heating which is too sketchy to be useful to the architect and cannot really help the layman.

This book should be in the library of every architect starting a practice that will be largely concerned with domestic work.

\*\*\*

Domestic Gas Appliances, by A. P. Apmann, American Gas Journal, Inc., New York, 239 pp., text illustr., 1st ed. Published as a guide to salesmen of gas appliances this amplification and revision of a series of articles appearing in American Gas Journal will be found useful by the architect. 12mo.

Starting with a discussion of the characteristics of fuels and passing through the subjects of heat production and relative costs of fuels to a direct discussion of gas appliances all the information is stated without any attempt to emphasize the particular advantages of gas as a fuel. The discussion of gas appliances is equally exhaustive and covers the whole question of accessory heat controls, etc., as well.

The last few pages, under the title of "The Future of Gas Utilization," contains valuable formulae for calculating dehumidifying and cooling requirements.



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With BRYANT equipment you are in a position to meet any residential air-conditioning requirement. A Bryant air-conditioning engineer will be glad to assist you. The Bryant Heater Company, 17840 St. Clair Ave., Cleveland, O.

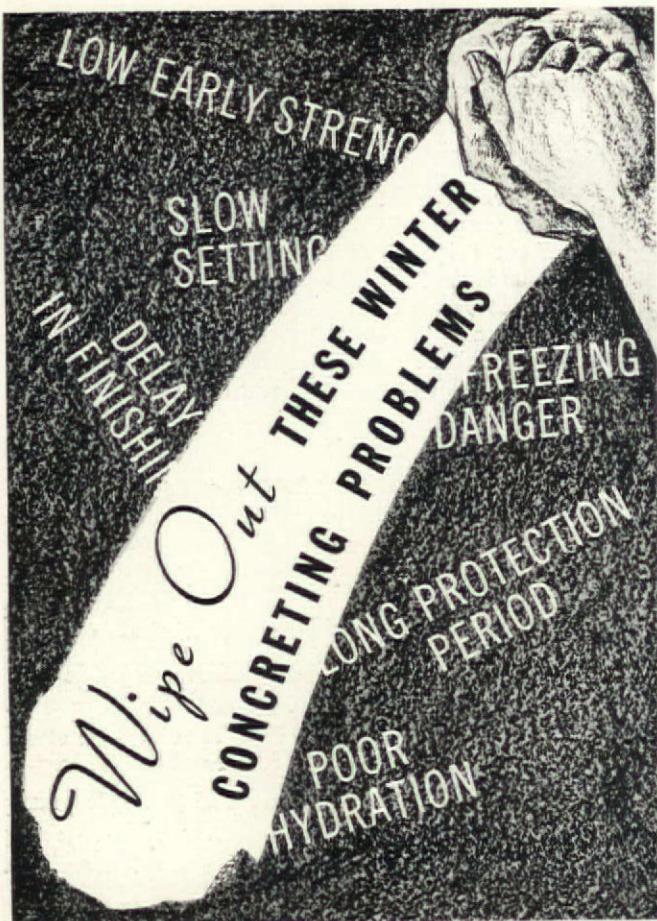
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In cost of operation, cost of manufacture, number of working parts, this new electric hoist, Model E, is considerably under any other electric hoist we have ever made.\* All factors of safety, efficiency and durability increased in direct proportion. For complete specifications, write

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## PRODUCTS & PRACTICE

(Continued from page 6)



TVA'S All Steel House

### ALL-STEEL HOUSE

THE first all-steel house ever erected for the United States Government is nearing completion near Norris, Tenn. Built among the trees of the Tennessee Valley for TVA by the Insulated Steel Construction Co. of Middletown, Ohio, the total cost will be \$2,100. It is built of the Middletown company's patented frameless steel construction, contains a large living room, dining alcove, bedroom, bath and kitchen. Heavily insulated, heating is supplied by unit electrical heaters. The exterior is of porcelain enamel siding attached to the side of the building with stainless steel clip-strips. This is expected to solve completely the problem of the maintenance of the exterior finish as it requires no painting and can be easily cleaned with a damp cloth.

### COMBINED HUMIDITY AND TEMPERATURE CONTROL

HITHERTO it has been necessary to have at least two instruments to control both humidity and temperature in the ordinary air conditioning installations. Now the Minneapolis-Honeywell Regulator Co. is manufacturing a combination instrument. The thermostatic control has a bimetallic actuating element operating a mercury switch that may be used on either low or line voltage circuits and operates with a differential of less than 1° above or below the setting. The humidity control is of the hair-hygrometric type also operating a mercury switch capable of use on low or line voltage. The differential is within 2 per cent under normal rate of change of relative humidity. The temperature range is from 60 to 80° F., humidity setting from 20 to 80 per cent relative humidity. The instrument is available with or without a humidity indicator scale.

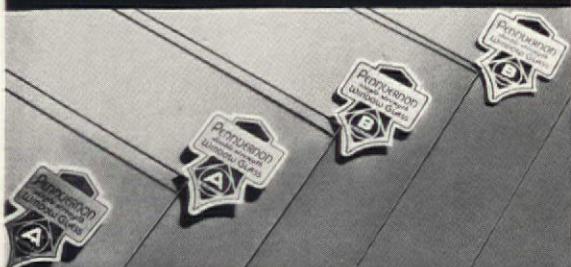
### NEW ELECTRIC RANGE

MANY radical departures from stereotyped procedure have been made in the new range announced by the Westinghouse Electric & Manufacturing Co. Produced to sell for less than half the usual price, the new "Cardinal" has a main body of welded steel covered with Dulux, a new baked-on synthetic enamel developed especially for use under high temperature. The cooking top, back splasher, side splasher and oven door frame are made of a new alloy called "Sanalloy." This material is the result of years of experiment and is used to provide permanent assurance against crazing and chipping. The range has a standard oven, with standard insulation and one 2,000 watt unit. Three platform heating units are of the coil type. A convenient radio type dial on the oven top regulates the first direct action automatic temperature control without an intermediary relay.

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*A good view deserves to be seen through a good window glass!*

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With the aid of these convenient Pennvernon labels you can tell at a single glance whether the quality of glass you specified has been used on a job.



WHEN you wish to give the buildings you design the full benefit of the attractive scenes around them, specify Pennvernon Window Glass. This glass, made by a special manufacturing process, is surpassed only by polished plate glass in its clearness, freedom from defects, and fidelity to the true shapes and colors of objects seen through it. It transmits unchanged into the homes you create the beauties of the outdoors, thus adding enormously to the interior charm of the finished structures.

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Pennvernon Window Glass costs no more than ordinary glass. It is available in single and double strength, and in thicknesses of  $\frac{3}{16}$ " and

$\frac{1}{2}$ ", at the warehouses of the Pittsburgh Plate Glass Company located in all principal cities. It may also be obtained through progressive glass jobbers and leading sash and door manufacturers. Write for samples to Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Penna.

# PENNVERNON WINDOW GLASS

# Where SPACE... or ECONOMY ...is the Problem

EVERY home *should* have its stall-shower — and bathtub. Because there are still vertical *and* horizontal types of bathers.

But when you're remodeling an old bathroom, and there just isn't space for *both* the stall and the tub — well, consider Scovill's new Fold-Spray shower-curtain. Because with it you can combine the two, and still not burden the house with a shower-curtain that looks like a laundry bag . . . that *must* have an overhead unit with rattly rings . . . and that *does* open up occasionally and allow the floor to become deluged.

Fold-Spray makes a nice economy in the planning of new houses, too . . . where price is a factor, and Roman baths are simply prohibitive. You do both the builder and yourself a favor, really. Because *he* respects your judgment, and *you* protect it. May we tell you more about Fold-Spray? Write us, at the



## COMPACT . . .

*Folds out of the way when not in use. Fits any built-in tub recess.*



## WORKS SIMPLY . . .

*Arms glide smoothly into place. Note splash-protection at base.*



## AMPLE SPACE . . .

*Plenty of room inside. No close, clinging, clammy curtains.*



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**SCOVILL**



## PRODUCTS & PRACTICE

(Continued)

### COLORED LUMILINE LAMPS

LUMILINE Lamps, first announced in May, are finding widespread application where space limitations require a tubular source. The Lumiline has the further advantage over the screw-base lamps that they may be placed end to end to produce a continuous light line with a minimum amount of dark area.

The Incandescent Lamp Department of General Electric Co. has now produced a 40-watt size between the former 30- and 60-watt units. They are also prepared to supply these lamps in the following colors: straw, orange, moonlight blue, emerald, and surprise pink.

### VIBRATED CONCRETE

EXPERIMENTS in concrete work have definitely proved that the amount of water used to form the mixture is as important as the amount of cement, sand or stone. Unfortunately, concrete mixed as stiff as will produce the best results cannot be made to flow into place by ordinary methods. Now, however, vibration has been called into play and better concrete is the result. Architects and engineers interested in this subject and the slight changes in technique necessary will find valuable information on the subject in the booklet entitled "Vibration," issued by the Portland Cement Association.

### AIR HUMIDIFIER

THE Bryant Heater Co. which has manufactured gas-operated boilers for many years has now added to their line a completely self-contained gas-operated humidifier unit which cleans, circulates and warms the air at the same time. This humidifier is designed to be hung from basement rafters, with a distributing duct leading to an outlet grill on the floor above. The cabinet is delivered complete, ready for installation and connection to gas and water lines and the distributing outlet. The capacity of the unit is ample for supplying proper humidity to the great majority of residences.

### NEW REFRIGERATOR

THE Norge Corp. has added to its line of refrigerators a chest type model T-20 to be known as the "Norgette." Specifications are: 2 net cu. ft. storage space (N. E. M. A.); porcelain top, lacquer sides and front, full porcelain interior; dimensions: height, 36 in., width, 22½ in. depth 19½ in.; fittings: one basket, one sliding and one tank bottom shelf; shelf area, 5.8 sq. ft. There are two ice trays with a capacity of 36 ice cubes or 2¾ pounds of ice. With the sliding shelf removed, total capacity is 36 bottles. The outstanding feature is the standard Rollator, over-powered to use less electrical current.

### FLOOR LEVELING COMPOUND

A PRIMARY requisite of modern resilient floor laying is an absolutely level and even sub-floor. Even the smallest unevenness results in shortening the life of the floor, if not in serious damage. Levelite is a new compound now being offered by Selby, Battersby & Co. to obviate all these difficulties. It is a plastic compound easily applied in three simple operations over any sound sub-floor. This sub-floor may be of steel, wood, cement finish, rough concrete, glazed tile, brick, or asphalt. The product comes in the form of a liquid bonder, a compound in powder form and an emulsion. The liquid bonder is applied to the surface, which requires no special preparation, with a brush or notched trowel. The powder and the emulsion are then mixed together and applied with a trowel to a true level. This hardens rapidly to a surface resembling wood in many of its physical characteristics. Though designed as a leveler to be used under some other material the resultant floor may be left exposed to provide a tough sound deadening surface for foot or truck traffic.

# FRED W. GOUDY

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*Portrait by Oberhardt.*

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## "KIMBERLY PENCILS are smooth and don't smudge"

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Gentlemen—Recently I was asked by a friend to try the Kimberly drawing pencils in my work as a type designer. I chose 3 lead not hard enough to try at 7 degrees. I think this Kimberly as in fine a place as I have ever used—3 like its own pencil as I like our need—3 like its own pencil as I especially like it will erase clean without smudging.

*Fred W. Goudy*  
Read what he says.

Mr. Goudy is the most noted type designer today. Because he is also one of the most sincere and respected men in his field you can count on it that KIMBERLY pencils act the way he says they do in his letter above.

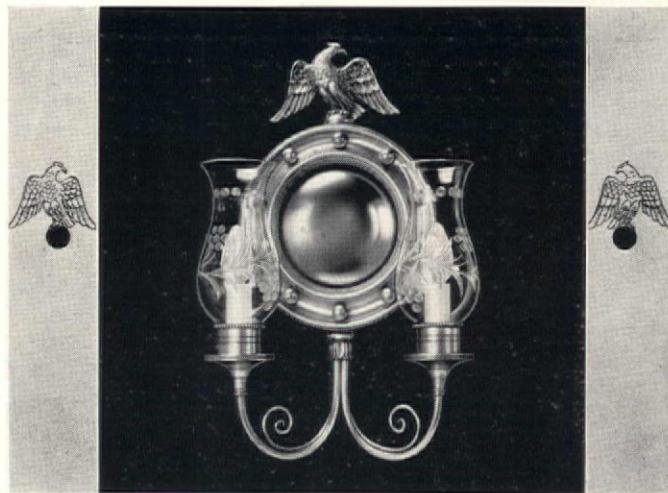
But there is really nothing surprising about KIMBERLYS' perfection: they are made to conform to the highest standards of performance "in action". They come in seventeen degrees of hardness, each of which is smooth, uniform and will never scratch. KIMBERLYS have great strength, requiring a minimum of sharpening and standing up under pressure when other pencils fail. You'll find too, that when erased, or when drawings are pulled out from a pile of others they will not smudge.

In every field where drawing pencils are used men at the top are using KIMBERLYS. And why not, when the cost is only ten cents and there isn't a better pencil to be had at any price!

We also make KIMBERLY thin lead colored pencils for a variety of uses.

*(This advertisement is set entirely in type faces designed by Mr. Goudy.)*

GENERAL PENCIL COMPANY  
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This impressive lighting fixture exemplifies the beauty and superb workmanship which prevails throughout all the period and contemporary selections now presented by Lightolier. An inspection will reveal that the present levels of prices are in line with today's restricted building budgets.

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### In the Building Field

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This Company also manufactures U.S.S. Stainless and Heat Resisting Sheet Sheets and Light Plates for all purposes.

AMERICAN SHEET AND TIN PLATE COMPANY, Pittsburgh



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KOHLER — for endurance



AT TOP: The lines of the NEW Kohler Metropolitan fittings are distinctively modern and harmonize with Kohler Metropolitan bathroom fixtures. Escutcheons and spouts are octagonal. Handles are easy to grip . . . valves open and close completely with finger-tip control.

CENTER: This K-8020-M Ban-croft lavatory fitting illustrates the beauty of the new Kohler Metropolitan design.

AT BOTTOM: The K-7531-M Lyndon shower and bath fitting with Niedecken mixer in new Kohler Metropolitan design.

ONE of the blessings of civilized living is in having dependable and sightly bathroom fittings . . . faucets that pour out a generous flow, that close tightly at a touch . . . drains that swish out the water in a hurry . . . fittings easy to install and sure to add true distinction.

Kohler bathroom fittings will back up your good judgment in specifying them. Examine one closely. Heavier, it has an extra amount of copper. Its gleaming finish is a thicker, more uniform coating of easily cleaned, hard, durable chromium plate. Each fitting is made to hairbreadth accuracy under relentless inspection at every step. Deep, machined, double Acme threads are always in mesh; joints are water-tight; wearing-surfaces are mirror smooth — long lasting. Handles turn easily at a touch of the fingers. . . . As a rule, Kohler fittings are more quickly, hence more economically, installed.

Kohler of Kohler offers distinct lines of fittings: The Metropolitan, a high-quality line of fittings with graceful octagonal escutcheons and spouts, at a very moderate price. Or, where rounded escutcheons and spouts are preferred to the Octagonal, the Dynamic fitting is available. And for a *de luxe* fitting, there's the Octachrome, a more massive, luxurious fitting with octagonal escutcheons, spouts and handles. . . . Remember, Kohler fixtures deserve Kohler fittings. Visit the nearest Kohler showroom, or write for further information to Kohler Co. **NRA** Founded 1873. Kohler, Wis.

**KOHLER of KOHLER**  
*planned plumbing*

PRODUCTS & PRACTICE

(Continued)

RANGE HOOD

A NEW Monel metal fixture for the home is a range hood and ventilator made by the Universal Blower Co. Custom-built Monel metal range hoods have been available for a number of years but this is the first time that a standard fixture has been placed on the market. Designed to match other Monel metal equipment, such as sinks, tables and ranges, it also provided better lighting facilities through a built-in fixture. Positive ventilation is assured by a small fan and electric motor.

NEW CONTROL

TEMPERATURE and humidity are ordinarily controlled by thermostatic and hygrometric instruments of one sort or another located within the house. Minneapolis-Honeywell now announces a revolutionary departure in their Weatherstat which is designed to control air conditions within the building from the effects of weather factors outside the building. This instrument takes into account temperature, wind direction, wind velocity and solar radiation. The reaction to all four of these factors enables it to change the supply of heat to the building or zone which it controls.

WELDING ELECTRODE

ECONOMICAL production of high-speed, high-quality electric welds in the flat position is assured by the new G-E Type W-23 coated electrode recently announced by the General Electric Co. These are suitable for either manual or automatic arc welding and will produce equally satisfactory results on either alternating or direct current. Welds made with this new electrode are said to be smooth, of excellent appearance, and to possess exceptional tensile strength, density, ductility, and resistance to impact and corrosion. These electrodes are particularly recommended for the fabrication of pressure vessels, pipe, machinery and all types of joints where welding may be carried out in a flat position.

NEW REFRIGERATOR

WESTINGHOUSE Electric & Manufacturing Co. announces a new chest type refrigerator of two cubic foot capacity. It is particularly recommended as an auxiliary refrigerator for use in recreation rooms, pantries, small stores, business offices and small apartments. The exterior is finished in white Dulux and the interior in one-piece porcelain. Two and a quarter pounds of ice or twenty cubes can be made with a single freezing. The dimensions are 36 in. high, 22½ in. wide, 20¼ in. deep. The one-eighth horsepower motor is directly controlled by a temperature selector located on the outside of the cabinet.

FLUSH VALVES

SCOVILL MANUFACTURING CO. has improved its flush valve in the redesign of a self-lubricating plunger. This provides a film on the cylinder wall to keep the working washer from making direct contact with metal, and in condition for many times the life of a dry washer.

SIPHON-PROOF WATER CLOSET

CHICAGO's dysentery epidemic of a year ago has focused attention upon the subject of cross-connections in plumbing fixtures as a source of pollution of potable water supply. One method of preventing such cross-connection is offered by The John Douglas Co. with its Siphon-Proof water closet bowl. When the ordinary water closet becomes clogged for any reason, the water level rises to and above the outlets in the flushing rim. At this point there is an actual connection of a possible source of infection with the supposedly pure water supply. The Douglas Company's bowl obviates this by providing an overflow on the side of the bowl at a level sufficiently below the flushing rim to prevent contact.



## As vital as a fire escape... Emergency Lighting Protection

In any public building, light failure, plunging rooms and corridors in darkness, can prove nearly as dangerous as fire. This is a very real hazard, because interruptions in the normal current supply often occur and they are due to causes entirely beyond the control of utility companies. Although these companies take the most extreme precautions, fires, storms and accidents are impossible to prevent.

An Exide Emergency Lighting Battery System is economical and unfailing. It operates instantly and automatically upon interruption of normal current supply and in addition to furnishing abundant light the power supply for electrical apparatus can be safeguarded. Exide Systems are nominal in cost—especially so when incorporated into a building as an integral part of its construction. Write for bulletin giving full details.

**Exide**  
**Keepalite**  
**EMERGENCY LIGHTING SYSTEMS**

\$150 AND UP

THE ELECTRIC STORAGE BATTERY CO., Philadelphia  
The World's Largest Manufacturers of Storage Batteries for Every Purpose  
Exide Batteries of Canada, Limited, Toronto



Prize-Winning Cottage in University, Va. Architect, Milton L. Grigg, Charlottesville, Va. Painted with Cabot's Collopakes

## COLLOPAKES DECORATE FIRST PRIZE WINNERS

For Three Years

In 1931, the Jury of the Better Homes in America Small House Architectural Competition gave a gold medal to Winchton L. Risley of Los Angeles for a house in Palos Verdes, Calif. The house was painted with Cabot's Old Virginia White Collopakes.

In 1932, Royal Barry Wills of Boston was awarded the gold medal for a house in Brookline, Mass., painted with Cabot's DOUBLE-WHITE Collopakes.

In 1933, a gold medal was not awarded in the One-Story House Class, but first honorable mention went to Milton L. Grigg of Charlottesville, Va., for the cottage in University, Va. shown above. It is painted with Cabot's Collopakes.

Cabot's Collopakes are made by the patented Cabot Colloping Process, for every paint use. The pigments, reduced to sub-microscopic fineness, are colloidally compounded with the vehicle. As a result, they are carried further into the pores of the material covered than ordinary ground paints, giving better priming and adhesion and tending to prevent chipping and peeling. Their texture is finer and deeper, their color values richer. They have great hiding power and show no brush marks. A surface painted with Collopakes is extremely tough and lasting in any climate.

The coupon below will bring you full information

# Cabot's Collopakes

FOR EVERY PAINT USE

Made by the Makers of Cabot's Creosote Shingle and Wood Stains

*Samuel Cabot, Inc.*  
Manufacturing Chemists



141 MILK STREET  
Boston, Massachusetts

Gentlemen: Please send me Color Card and information on Cabot's Collopakes.

Name.....

Address.....

AF-10-34



56 Story City Bank Farmers' Building, New York City  
Walker & Gillette, Archts. Geo. A. Fuller Co., Contractors

## All Joints in Stone Copings and Projecting Courses

MADE PERMANENTLY WEATHER TIGHT  
WITH PECORA CALKING COMPOUND

Recently, the John J. Moran Co., New York, was awarded the contract to cut out existing mortar and calk all joints in stone copings and projecting courses in every set-back in this monumental building, the home of America's oldest trust company. It was provided that Pecora Calking Compound be used for permanency, the same material that was used for calking all window frames when the building was under construction. . . . Pecora Calking Compound is the most dependable material that can be used for making a building weather tight. Properly applied, Pecora Calking Compound will not dry out, crack or chip, and is applicable to wood, glass, metal or stone.

For further details see Sweet's Catalogue or write direct to us

**Pecora Paint Company**

Inc.

Fourth and Venango Streets  
PHILADELPHIA, PA.

Established 1862 by Smith Bowen

ALSO MAKERS OF PECORA MORTAR STAINS

THROUGH an error the August issue carried a notice, under the heading Latin Tiles, of a publication of Gladding, McBean & Co., of San Francisco, that is now out of print.

AMONG the manufacturers' publications recently received were the following:

### 1001. ENGINES AND PUMPS

Eight separate pamphlets describing: single stage volute centrifugal pumps, direct injection vertical four-cycle Diesel engines, type C, CA, and CB centrifugal pumps, other types of Diesel engines, type R centrifugal pumps, horizontal duplex piston pumps, type VA, horizontal duplex piston pumps, type VC, and steam booster compressors; from the Worthington Pump Co.

### 1002. GREENHOUSES AND CONSERVATORIES

Curved eave, and straight eave greenhouses and conservatories of freestanding and lean-to types, from Hitchings and Co.

### 1003. WATER METERS

Four separate bulletins on frost-proof disc water meters, both open and enclosed gear trains, and Split case models of both open and closed gear trains, from the Worthington-Gamon Meter Co.

### 1004. SHEET AND STRIP SIZES

From Inland Steel Co. a handy booklet listing size data on all Inland products except rails, track accessories, and tin plate, together with other useful information.

### 1005. ZINC ALLOY STEEL SHEETS

Also from Inland Steel Co. a folder describing and illustrating the uses of Inland Zinc-Alloy Steel Sheets.

### 1006. ELECTRIC COOKING EQUIPMENT

From Edison General Electric Co., Inc., catalogue No. B-700 containing a complete list of its electric cooking equipment for hotels, restaurants, bakeries, hospitals, public institutions, marine galleys and clubs.

### 1007. BOILERS AND RADIATORS

From National Radiator Corp. a new handbook of National Gas Boilers, a supplement to catalogue No. 2 listing aero convectors, and a small brochure, "Inside Information on Concealed Heating."

### 1008. AIR CONDITIONERS

From Air Conditioning Division, Savage Arms Corp., a bulletin on Zephyr All-Year Conditioners.

### 1009. SEWAGE AND SUCTION PUMPS

From Nash Engineering Co. bulletins listing Jennings Suction Sewage Pumps, Jennings Suction Sump Pumps, and a new air centrifugal compressor that delivers cold air.

### 1010. CAULKING AND POINTING

From the Tremco Manufacturing Co., a brochure containing new specifications for the use of Tremco Caulking & Pointing Compound in masonry buildings.

### 1011. ELECTRIC WELDING

From the Lincoln Electric Co. a short treatise on the properties of shielded arc electric welds in steel.

### 1012. INSULATION

From The Armstrong Cork and Insulation Co. two booklets prepared in cooperation with the U. S. Department of Commerce, National Committee on Wood Utilization. These give data on insulation of house and farm.

# METALLATION\*

Modern Building insulation  
at one-third former cost.

## REYNOLDS METALS COMPANY

INCORPORATED

19 Rector Street . . . . New York City  
345 Ninth Street . . . . San Francisco  
400 Wrigley Building . . . . Chicago

\*Metallation is the trade name for polished-metal insulation products made only by the Reynolds Metals Company, Inc.



## AND ANOTHER BUILDING IS MODERNIZED WITH TEMPERATURE COMFORT

That's just how easy it is to replace ordinary radiator valves with Sylphon Automatic Valves—to banish fuel-wasting, tenant-irritating over-heat—to lift the average older building out of the outmoded class into the spotlight of a temperature-conscious public.

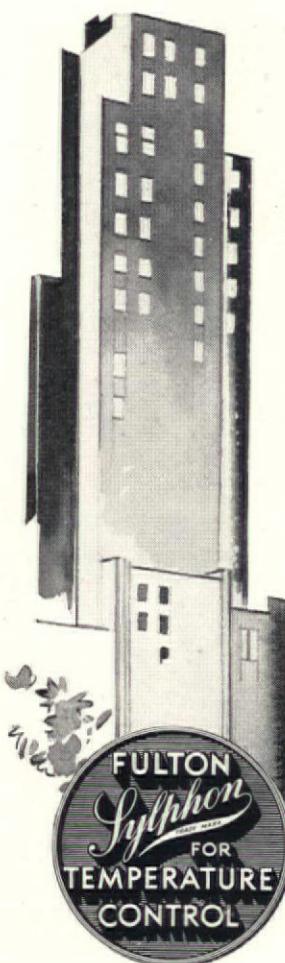
Sylphon Automatic Radiator Valves—self-contained, self-sufficient units that require no costly building alterations, no complicated piping, wiring or connections to auxiliary equipment—accurately modulate the flow of steam to each radiator by means of an automatically variable orifice, actuated by a sensitive, integral thermostatic element.

They simply are set for the room temperature desired and forgotten.

Types for both exposed and concealed radiation. Small, inconspicuous, neat in appearance, tastefully finished to harmonize with any room's appointments.

Products of specialists in temperature control for over thirty years.

Write for Bulletin TA-255 for up-to-the-minute information.



YOUR HOME IN  
PHILADELPHIA



Here a gracious, unobtrusive hospitality in the best Philadelphia tradition . . . every thought for your comfort . . . rooms smartly modern in decoration and appointments, including Simmons Beds . . . the skill of Bellevue chefs . . . and a convenience of location that will make yours a well remembered visit.

# Bellevue Stratford

CLAUDE H. BENNETT, General Manager

**FULTON SYLPHON CO.**  
KNOXVILLE, TENN., U.S.A.

European Representatives, Crosby Valve and Eng. Co., Ltd., 41-2 Foley St., London, W. 1, Eng.; Canadian Representatives, Darling Bros., Ltd., 140 Prince St., Montreal, Quebec, Canada. Representatives in All Principal Cities in U. S. A.

# How long will the room remain Quiet?

## Acousti-Celotex Permanently Solves This All-Important Problem

Noise can be subdued—acoustical conditions corrected—hearing made easy.

What are the requirements for the materials to be used? Acoustic requirements vary according to the job. Other conditions of importance are involved—easy installation, economical upkeep, dignified appearance, assured permanence.

The problem of the architect is, therefore, the selection of the right product.

Acousti-Celotex sound-absorbing tiles simplifies this problem and has been favored by architects for installations in thousands of buildings—new and old—public and private—banking chambers, offices, work rooms, churches, hospitals, schools, auditoriums.

To meet the various requirements in absorptivity Acousti-Celotex offers a choice of four types: Type A, Single B, Double B and Triple B, with coefficients of .36, .47, .63, .91, respectively.

One square foot of Type Triple B absorbs, at 512 cycles, 91% of the incident sound. Where large areas are to be covered and a moderate acoustical efficiency is sufficient, Type A, the new half-inch material, will prove adequate and at the same time effect additional savings.

Acousti-Celotex—any type—is easily cleaned with a brush or a vacuum cleaner. When

painted with a washable paint it may be cleaned by washing.

But most important of all its advantages is the fact that repeated painting does not reduce its acoustic absorptivity. Patented perforations (441 to the square foot) provide access for sound waves into



Acousti-Celotex on the ceilings quiet the corridors of the S. D. Warren Co. Public Service Bldg., Boston, Mass.

the inner absorbent material. The sound-absorbing effectiveness continues as long as the building endures.

Acousti-Celotex comes in modern tile units of a neutral buff color and, applied directly to new or old ceilings, are readily arranged in patterns to harmonize with the character of the room.

Apply to the Acousti-Celotex contracting engineer in your city for information, estimates, technical data, or write direct.



**PAINTABLE**  
**ACOUSTI-CELOTEX**  
TRADE MARK REGISTERED

**PERMANENT**  
U. S. PATENT OFFICE

THE CELOTEX COMPANY  
919 No. Michigan Ave., Chicago, Ill.

Please send me  the name of the Acousti-Celotex contracting engineer in my city,  estimates,  technical data.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

A. F. 10-34

## MANUFACTURERS' PUBLICATIONS

### 1013. AIR CONDITIONING

From General Electric Co. further literature on air conditioning in a booklet entitled "It's in the Air."

### 1014. ILLUMINATION DATA

From Westinghouse Lamp Co. a small pamphlet with information on lighting problems and a lighting chart, entitled "Old Eyes in Young People."

### 1015. ELEVATORS

From Otis Elevator Co. two bulletins, one describing under-counter dumb-waiters electrically operated, and the other listing elevator indicators.

### 1016. OXYACETYLENE WELDING

From the Linde Air Products Co., two booklets, one on the maintenance of reciprocating parts, and the other on 101 uses for the oxyacetylene flame.

### 1017. COOLING SURFACES

From the Aerofin Corp., a new bulletin covering Aerofin Direct Expansion cooling surfaces.

### 1018. BALL-SEAT VALVE

From the Air Reduction Sales Co. a description of a new Airco Ball-seat Valve for oxygen cylinders.

### 1019. AIR WASHERS

From B. F. Sturtevant Co. a new folder describing and listing its air washers and accessories with a psychrometric chart.

### 1020. MOLYBDENUM

From the Climax Molybdenum Co. the first of a series of sheets dealing with the properties which molybdenum imparts to irons and steels.

### 1021. WELDING PROCEDURE

From Ingersoll Steel and Disc Co. a manual of welding and fabricating procedures for Ingaclad stainless clad steel.

### 1022. HIGH SPEED ABRASIVE WHEELS

From Bakelite Corp. a 24-page booklet describing the advantages of high-speed abrasive wheels bonded with bakelite resinoid.

### 1023. PLYKROME

From the Illinois Steel Co. a short description of the fabrication of large sized sewer pipes from their Plykrome stainless clad steel.

### REQUEST FOR DATA

To obtain any of the publications reviewed on these pages, indicate the number and send coupon to THE ARCHITECTURAL FORUM, 220 East 42nd St., New York.

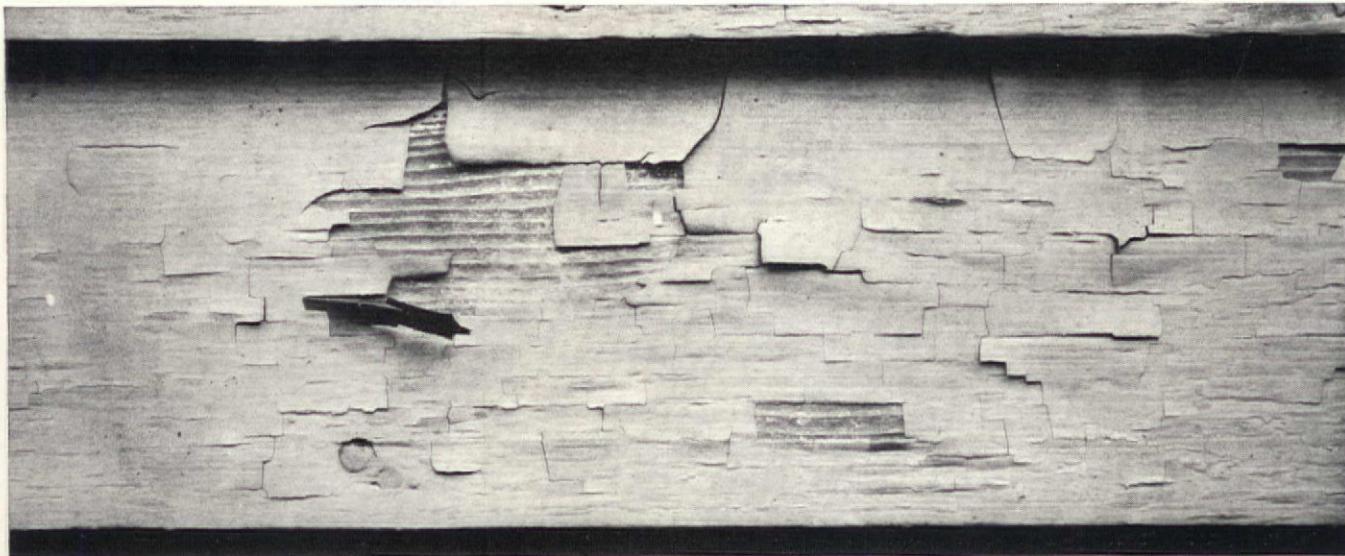
NAME \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_

CITY AND STATE \_\_\_\_\_

Please check here if engaged in Architectural Practice

**S**uppose a house you planned and built



**suffered PAINT FAILURES LIKE THIS!**

—you would  
welcome this information  
about a whole community  
that made a remarkable  
paint test.

If you faced paint failures as bad as this one you would take some time to study the results shown by test fences and laboratory tests of various paint failures.

You would be particularly interested in a test conducted in a whole community—a test made on 100 houses in actual use in a territory completely surrounded by steel, cement and chemical plants—



one of the most cruel, most convincing tests ever made in determining paint durability and economy.

The results of this remarkable test made in an Indiana mill community are presented in a folder which is yours upon request. Evidence is shown in unretouched photographs, taken two years after the three different kinds of paints were applied. One paint was remarkably successful. It was 100% white lead in oil—Eagle pure White Lead. To every man who has ever had to face the fact or the possibility of bad paint failures, a study of this folder is particularly timely and interesting.

***White lead lasts!***

**USE THIS COUPON, POSTCARD OR LETTER**

The Eagle-Picher Lead Company, Dept. AF10, Cincinnati, Ohio.

Please send me a file copy of the folder describing the Indiana steel community paint test.

Name \_\_\_\_\_

Address \_\_\_\_\_

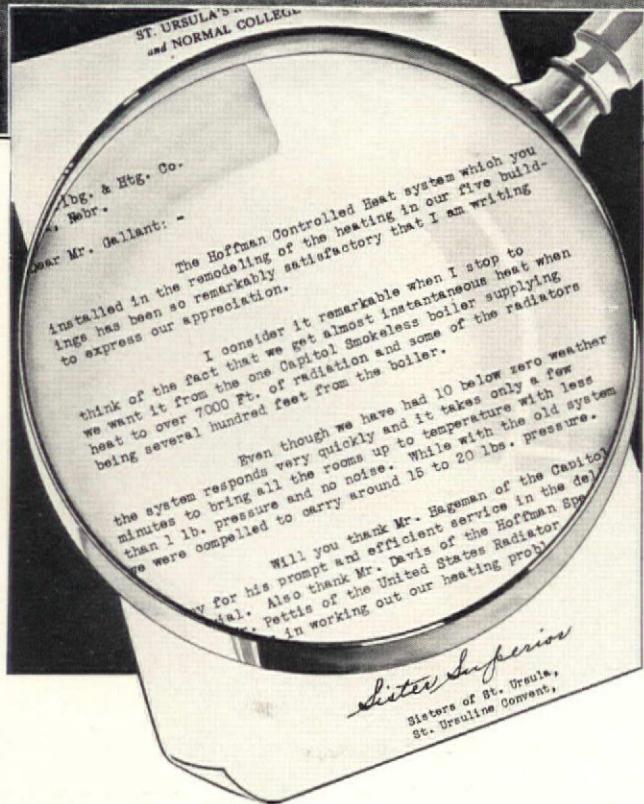
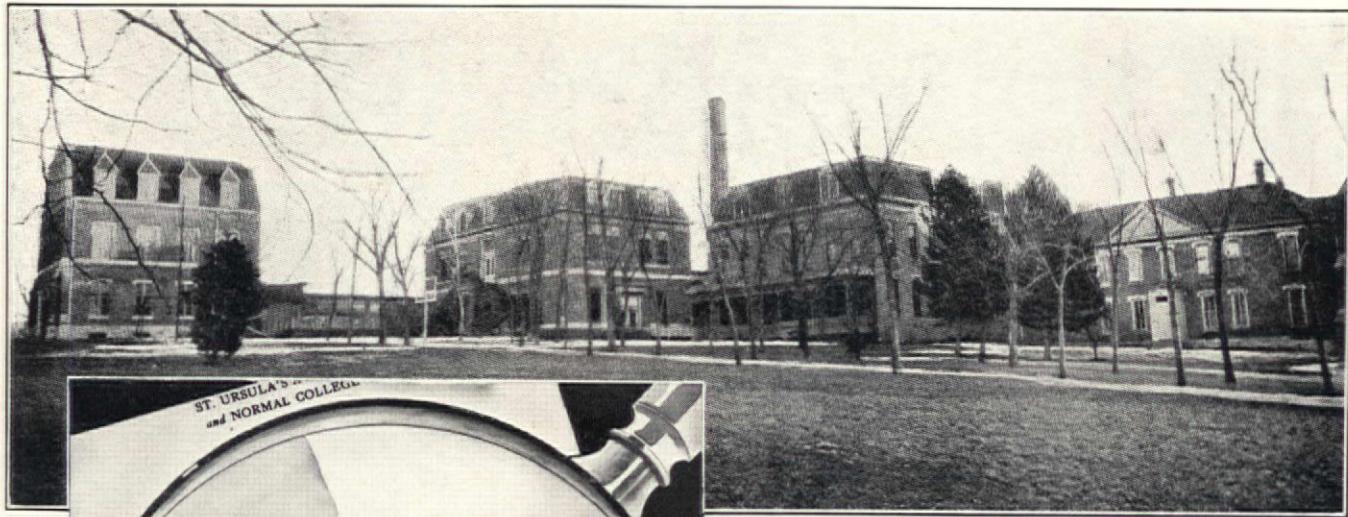
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**EAGLE pure WHITE LEAD**

Used for good painting since 1843

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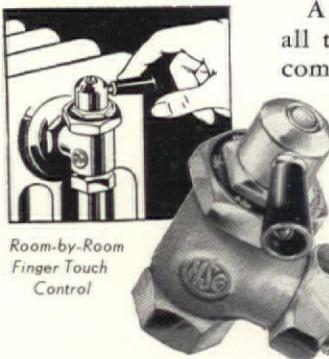


In the light of modern heating evolution, remodeling of steam plants is inevitable for many buildings now struggling with out-moded equipment. Sound management demands the economy of operation that is today available.

St. Ursula's Academy, of York, Nebr., offers a case in point. Here an antiquated heating system, serving five widely scattered buildings, consumed an extravagant amount of fuel without a satisfactory return in heat.

Installation of a Hoffman Controlled Heat System seven years ago solved the problem — the letter above is evidence of the buyer's satisfaction.

This completely modern heating method provides the three factors so desirable in either institutional or residential heating systems. (1) "Balanced" steam distribution, (2) Regulation of temperature to varying demands, (3) Economy.



**HOFFMAN SPECIALTY CO., INC., WATERBURY, CONN.**

Also Makers of Hoffman Venting Valves, Supply Valves and Hoffman-Economy Pumps

## ST. URSULA'S ACADEMY

*Ends Heating Troubles*

*by Changing to*

# HOFFMAN

## Controlled

# HEAT

Hoffman Controlled Heat is a vapor-vacuum system, operating on low pressure steam. Hence, economy of operation. Its system of controls permits correct distribution of steam, a highly important feature that means no cold — no over-heated rooms.

Yet, if the occasion requires, the temperature in any room can be raised or lowered by a finger's touch upon the lever of the Radiator Modulating Valve, without affecting other rooms.

A Hoffman representative is available at all times to show you how easily the discomforts of an inefficient heating system can be banished, or extravagant fuel bills slashed.

Send the coupon for a free survey of your present heating system — there is absolutely no obligation.

HOFFMAN SPECIALTY CO., Inc.

Dept. AF-5, Waterbury, Conn.

Send me full information about Hoffman Controlled Heat.

Name .....

Address .....

City .....

State .....

# WITH REMODELING MONEY AVAILABLE



*Clients will approve  
Monel Metal Kitchens*



ABOVE—Women are quick to realize the advantages of Monel Metal working surfaces...easy to clean, strong enough to stand up under ceaseless punishment by pots and pans, and enduringly beautiful. This kitchen shows a Monel Metal "Straitline" Cabinet Sink, also "Smartline" Table and range with Monel Metal top.



THANKS to F. H. A. money now available for remodeling, you aren't forced to compromise, or put up with makeshifts of any sort. In planning new kitchens, you are free to include sinks of Monel Metal.

Also cabinet tops. And other Monel Metal equipment you have always wanted to install.

Home owners are with you. At last

they know they're able to get the kind of kitchens they want.

And they want kitchens that are modern and well-planned. They want Monel Metal. They know it is rust-proof, resistant to corrosion, strong as steel. They like it because it can't wear out, and cleans easily...and because it's a solid metal that never chips or cracks.

With money so plentiful and terms

so liberal they can give free rein to their preference for Monel Metal.

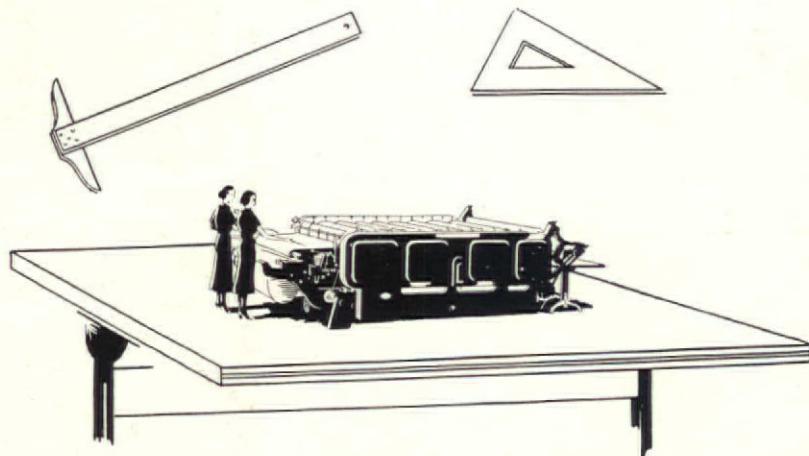
THE INTERNATIONAL NICKEL COMPANY, INC.  
67 WALL STREET NEW YORK, N. Y.

**Monel Metal**



Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.





## IRONING OUT THE LAUNDRY WRINKLES

...ON THE DRAFTING BOARD

**N**OW that the Government is making new funds available to hospitals, schools and other public institutions, more and more architects are being called into consultation to help with modernization and expansion plans. For almost invariably the specifications provide for a complete and thorough revamping of the institution's laundry department. And so it is that "American" engineers, who for years have enjoyed the confidence of this far-seeing profession, are so often privileged to help save many valuable hours for the architect, and many dollars for his client.

• Right now or in the future, whenever your specifications reach into the ever-changing laundry field, an inquiry will bring an "American" engineer to your office at any time most convenient for you. He can help you to revise floor plans—suggest machines and procedures that will improve the institution's service and put more laundry capacity in the same space. His services are confidential and will not obligate you in any way. **THE AMERICAN LAUNDRY MACHINERY COMPANY • CINCINNATI, OHIO**





# POWERS AT HARVARD

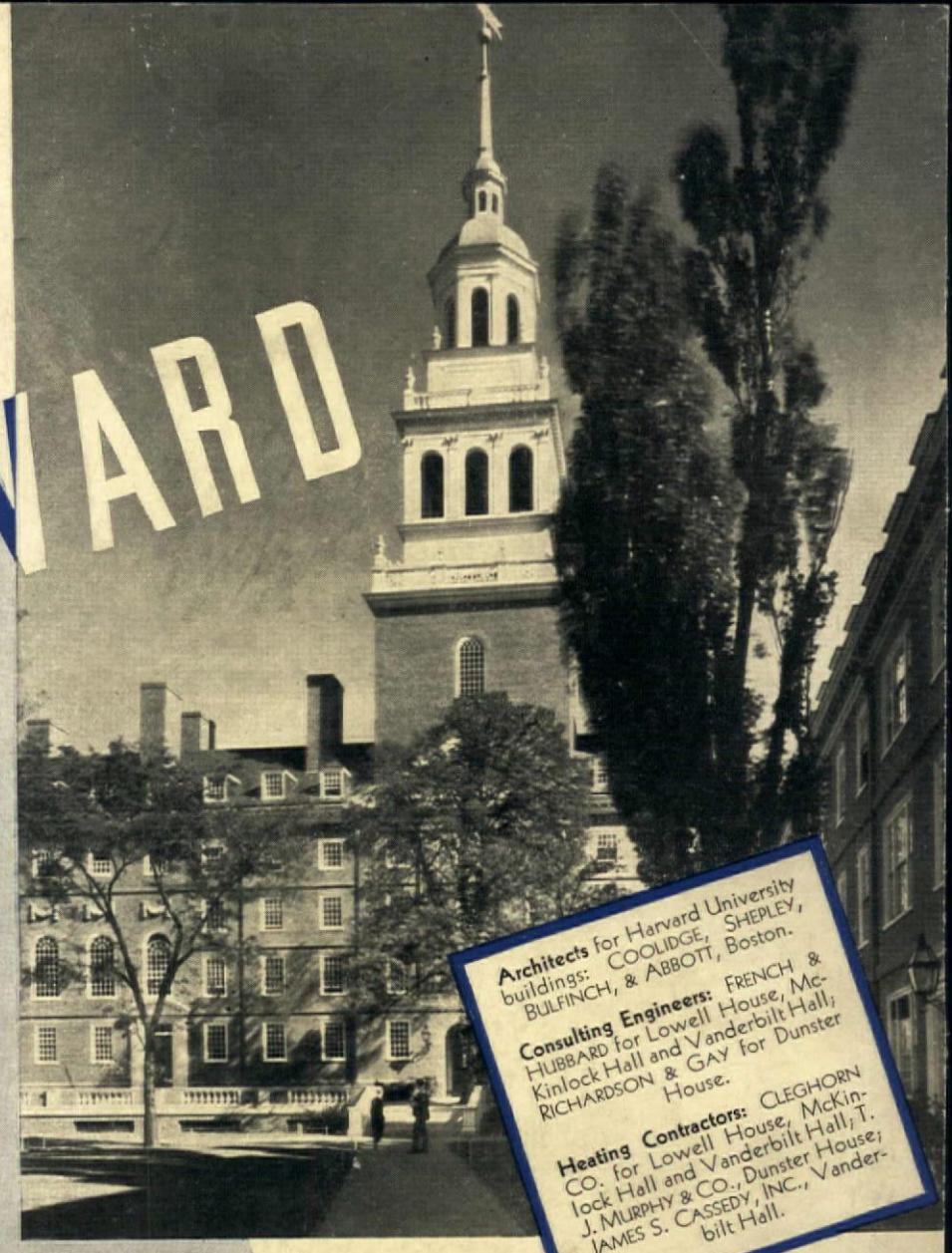
At Harvard, Yale, Princeton, Vassar, Wellesley, and hundreds of other prominent educational institutions will be found buildings equipped with the Powers system of automatic temperature control.

Over 40 years of experience in developing and installing automatic control for heating, ventilating and air conditioning equipment in all types of buildings, such as those illustrated here and listed below, qualify us to assist architects and engineers on any problem of temperature and humidity regulation.

The Powers Regulator Co., 231 East 46th St., New York; 2720 Greenview Avenue, Chicago—Offices in 43 Cities in the U.S.A. and Canada.



15 to 20 years of dependable control without repair expense is often reported by users of Powers Control. This is due to the SERVICE we build into our equipment—the great care used in proper installation—the frequent inspections to check up performance—a service that continues throughout the life of the building.



Architects for Harvard University buildings: COOLIDGE, SHEPLEY, BULFINCH, & ABBOTT, Boston.

Consulting Engineers: FRENCH & HUBBARD for Lowell House, McKinlock Hall and Vanderbilt Hall; RICHARDSON & GAY for Dunster House.

Heating Contractors: CLEGHORN CO. for Lowell House, McKinlock Hall and Vanderbilt Hall; T. J. MURPHY & CO., Dunster House; JAMES S. CASSIDY, INC., Vanderbilt Hall.

Lowell House (above)  
Dunster House (at the left)

In both of these buildings Powers equipment automatically regulates temperature of ventilating systems and direct radiation. Hot water heaters in the Dunster House are also Powers controlled.



McKinlock Hall—Powers control regulates temperature of direct radiation and hot water heater.

Vanderbilt Hall—Harvard Medical School—Ventilating system and direct radiation regulated by Powers Control

## POWERS TEMPERATURE AND HUMIDITY CONTROL

... Meets all the rapidly growing demands of the Air Conditioning Industry

Powers control used in—Chrysler and Empire State Buildings... Du Pont Rayon Mills... Rockefeller Center... J. D. Rockefeller Residence... Berkshire Knitting  
Sears Roebuck & Co.'s new completely air conditioned windowless store in Chicago... White House Executive Offices... New U. S. Post Office Building, Washington.